

MOTOR AGE

Vol. VII No. 8

CHICAGO, FEBRUARY 23, 1905

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MOTOR AGE

VOL. VII. No. 8

CHICAGO, FEBRUARY 23, 1905

\$2.00 Per Year

CLEVELAND'S

MOTOR SHOW



Cleveland, O., Feb. 20—The show committee of the Cleveland Automobile Club heaved a sigh of relief, when, at 6:30 this evening, every exhibit was in shape and every car in place and the show was ready for the opening. The preparation for the show was no small job, because it embraced crowding into old Gray's armory about twice as much material as it had ever contained before.

For weeks the committee had been figuring upon the impossible job of allowing several concerns to occupy the same space at the same time and while they failed, of course, they succeeded in cutting more spaces out of the same material than had been considered possible heretofore. Spaces were made smaller and aisles narrower. The armory room adjoining the main hall was apportioned off for exhibition spaces, and odd spots heretofore given up to such useless embellishments as water coolers, resting places, etc., were made to do duty as exhibition spaces.

In all the number of spaces was increased about a third, while the number of lines exhibited increased by half. The congested condition of every space and the narrow aisles delayed things, not to mention the aggravating requirements of the fire department, which insisted that every piece of carpet and drapery must be sprinkled with fireproofing fluid, despite the fact that practically all of this sort

of material had been similarly treated at other shows. The wardens were from Missouri and you had to show them.

One of the new stunts, new for Cleveland at least, was the equipping of every stand with a telephone. A branch exchange was set up in the gallery and anyone could communicate with any part of the city, or long distance for that matter, without leaving his stand. The feature is of immense convenience in locating people and greatly facilitates business.

The electric signs and illuminations are more elaborate than last year, nearly every stand having something of this order. The crowded condition of the spaces made it impossible in many cases to install settees and chairs and those who desire to sit down are driven to use the cars as resting places, a fact which adds to the picturesqueness, particularly where the sitters are ladies in evening dress. All of the leading exhibitors brought their displays complete from previous shows, although, as already intimated, they found it difficult to make room for everything they wanted to show. It was all right in the case of some of the manufacturers who have only one or two models in their line, but in the cases of several of the larger dealers who have several lines and three or four models in each, it was simply a case of pick out the most desirable cars and trust to catalogues or demonstrations to show up the others. One leading dealer who handles several lines declined to be satisfied with a small appropriation and withdrew altogether, renting a store for the week a square from the armory, where he is conducting a little show all by himself. An immense sign painted on a building opposite the armory draws the attention of nearly everyone to this fact.

The Detroit show was ushered in with below zero weather. Cleveland greeted its show with a nasty drizzle, a mixture of rain and snow, which made the sidewalks skating rinks and the streets quagmires—disagreeable for travel of any sort. Those who attempted to make demonstrations had to equip their cars

with non-slipping devices or they could not navigate, and it was dangerous at that. But the bad weather did not keep back the crowd. True, many of the elite came in their own cars or carriages, while those who did not own these luxuries alternately waded and slid from the cars to the armory. The Citizens' Transit Co., which is exploiting a huge electric bus, did charitable work and some good advertising by running one of its cars at intervals from the Hollenden hotel to the armory.

Society held sway tonight, as is usually the case with opening nights. Members of the Cleveland Automobile Club with their ladies were present in evening dress, and tuxedo coats predominated among those in charge of stands. The show is getting to be as much an annual society event as the horse show, and with good reason, for a handsome toilet can be better displayed in a shining automobile than any place imaginable.

The aisles and stands tonight were simply packed with people. The attendance the opening evening was from 600 to 700 more than the opening evening last year, which was thought to be a record breaker.

The report which is coming from all shows, local and national, that people are better informed and show a wider knowledge of automobile construction than heretofore, is par-





WHAT THE CLEVELAND SHOW LOOKS LIKE

ticularly true in Cleveland. This is hardly to be wondered at in view of the tremendous sale of cars in the past as well as for the large number of factories located here, which tends to disseminate automobile knowledge throughout all classes. Another thing, the class of people which attends Cleveland's show is better than that which attends similar shows in other cities; that is, the local shows. A larger proportion of them are interested in the game and have the money to buy cars. This class really predominates, to the exclusion of those who come to hear the music and collect souvenirs. Charles B. Shanks, of the Winton Motor Carriage Co., who has attended practically every national and local show of any importance ever held, said on this subject:

"As a rule I do not believe in local shows; that is, the scheme of getting the dealers all together in one building. I think the opening week scheme, such as we formerly had in the bicycle game, is productive of better results, as we have a better opportunity of talking to people and we accustom them to our place of business. But of all the local shows I have attended I think those held in Cleveland come the nearest to being the ideal article. I don't say this from local pride in my home city, but I really mean it. The majority of people who come here do not come out of idle curiosity. The majority of them are financially able to buy cars and

can be induced to buy if their interest is properly awakened. It is a fact that the very first two people I talked with tonight placed their orders for cars. They looked over our machine and then made the rounds and came back and gave me their orders, indicating that they were prepared to buy and appreciated that the sooner they got their orders in the sooner they would get the cars."

Mr. Shanks is not alone in this opinion and similar sentiments were expressed by others of the show circuit chasers. Evidence of the correctness of their impressions was the fact that practically every dealer in the house was able to close one or two bona fide sales this evening.

Of course there is not much new for those who have attended the big shows; in fact, there are but two cars in the house that have not been exhibited elsewhere or illustrated and described in the technical papers. Probably the most talked about feature is the side entrance car. This was pretty well exploited here early in the season last year by the Winton and Baker concerns, but the manner in which it has been taken up by all manufacturers is commented upon. Another innovation is the cape top. This does not appear to have taken very well in Cleveland thus far, but the advantages over the canopy top seem to be so numerous that it will be popular this season. The limousine body has

been quite common this winter and thanks to this the number of cars in use all winter has been much larger than ever before. It seems that there is less inquiry for the light run-about than for the lighter class of touring car. Cleveland is said to be the foremost touring car town in the country in respect both to the number of this class used as well as manufactured. Touring is very popular and with the immense park and boulevard system there is more of a tendency to use the automobile for pleasure and taking your friends out than for business work, so that nearly every one wants a car that will carry four or more if necessary.

The fact that every manufacturer of gasoline cars in Cleveland is now building four-cylinder motors seems to make this the accepted car and the man who has anything else is seldom satisfied with his machine, although of course many of the other styles are being offered and pushed here with good results.

One can not help noticing the fact that people are better informed than heretofore. The majority of the visitors talk details as though they understood. There are comparatively few of the class of bluffers who pretend to be wise and come up to a stand and ask if a car is run by gasoline, or if it has chain transmission, or this and that point which is plainly obvious to any one who knows the first thing about a car. But there is more

comment on the accessibility of a car, the simplicity of operation, the advantages of a certain class of material for a certain part, the merits of a certain lubricating system or transmission, or something of that sort.

There is a surprising intelligence among women. They are getting on to the technical make up of a machine in a manner unheard of a few years ago. The results of this tendency to learn the details of a machine have been apparent in Cleveland the past few months. It has been no uncommon sight to see a party of women bowling along in a big touring car, the wheel in the hands of a lady who showed plainly that she knew what she was doing. Not only in the parks but in the crowded down town sections of the city is this common.

The presence of tire makers this year adds greatly to the show. The devices for simplyfying the removal and repair of tires and the non-slipping devices, of which a large number is shown, attract almost as much attention as the cars themselves.

The lack of racing cars and freaks is a noteworthy point. In previous shows there have been a number of alleged startling innovations which made subjects for discussion among experts, not to mention good copy for space writers, but with the tendency toward standardization and the inclination to stick to tried principles, there is likely to be less and less of this. The following is a list of those exhibiting and their lines:

Reo Motor Car Co., Cleveland branch, Reo runabout.

Automobile Garage & Repair Co., 404 Huron street, Packard, Cadillac and Autocar lines.

Fisk Rubber Co., Cleveland branch, Fisk tires and repairing devices.

W. N. Booth Automobile Co., Wilson and Payne avenues, Pope-Tribune and Pope-Hartford lines.

Cameron Motor Car Co., 322 Prospect street, Cameron touring car and Cameron runabout.

Parsons Electric Motor Car Co., 392 Erie street, Cleveland, Parsons electric surrey.

Badger Brass Mfg. Co., Kenosha, Wis., Solar lamps.

Veeder Mfg. Co., Hartford, Conn., odometers, tachometers, etc.

Gray & Davis, Amesbury, Mass., gas and oil lamps.

Hartford Rubber Works Co., 77 Bank street, Cleveland, Hartford and Dunlop tires.

Hussey Drop Forge & Mfg. Co., Cleveland, steering wheels, circulating pumps, radiators, and forgings of all kinds.

Lorain Automobile Co., Lorain, O., the Elmore Pathfinder.

Diamond Rubber Co., Huron street, Cleveland, Diamond tires.

National Carbon Co., Cleveland, Columbia batteries and hand lamps.

Cleveland Motor Car Co., Cleveland, Cleveland touring car.

Standard Oil Co., Cleveland, Mobileoil lubricating oils.

Sprague Umbrella Co., Norwalk, canopy and cape tops.

Gabriel Horn Co., 422 Superior street, Cleveland, horns operated by exhaust.

D. E. Foote Co., Cleveland, Goodyear tires.

S. F. Bowser & Co., Fort Wayne, Ind., gasoline storage tanks.

The Twentieth Century Mfg. Co., New York, gas lamps.

Electric Storage Battery Co., Cleveland, Exide battery.

R. H. Magoon Motor Car Co., 574 Euclid avenue, Cleveland, Pope-Toledo touring car, Waverley Chelsea, Waverley coupe, Waverley road wagon.

Price Brothers Carriage Co., Huron street, Cleveland, Baker electric vehicles and Baker charging outfit.

White Sewing Machine Co., White Garage, Cleveland, White steamers, cape top, canopy top and limousine.

Gaeth Automobile Works, Cleveland, Gaeth touring cars.

H. S. Moore, 160 Crawford road, Cleveland, Queen runabout and touring cars.

Ohio Motor Car Co., Erie street, Cleveland, Columbia gasoline and electric, Buick gasoline, Locomobile gasoline.

Winton Motor Carriage Co., Cleveland branch, complete Winton line.

Chisholm & Phillips Automobilum, 1324 Euclid avenue, Cleveland, Peerless, Stevens-Duryea, Knox and National Electric.

The F. B. Stearns Co., Cleveland, Stearns touring car.

Royal Motor Car Co., Ohio sales department, Royal Tourist, cape top and limousine.

Morgan & Wright, Chicago, M. & W. tires.

Automobile Garage & Repair Co., Continental tires.

Cleveland Tanning Co., Cleveland, leather for automobile use.

Wayne Automobile Co., Detroit, Wayne car.

Cleveland Clasp Co., Cleveland E-Z-On vell clasp

Edmonds & Metzger Mfg. Co., Chicago, universal grip.

Bullock-Beresford Co., Cleveland, spark plugs.

Swinehart Tire Co., Akron, O., Swinehart solid tires.

A most striking car which is shown for the first time is a four-passenger electric surrey exhibited by the Parsons Electric Motor Carriage Co. of Cleveland. This is the first machine completed by the company, which manufactures but the one model. The car is of very attractive design, with graceful body and canopy top. It weighs 1850 pounds and is fitted with twenty-four cells of Willard battery, the weight being distributed by placing twelve cells in front under the hood and twelve under the rear seat. The motor, a machine designed especially for the service by the Hertner Electric Co., of this city, is suspended across the frame under the front seat, being practically beneath the center of the car. There are chains at both ends of the extended motor shaft transmitting to sprockets attached to the rear wheels, the rear axle being dead. There are powerful expansion brakes on the rear wheels, while the main brake is operated by reversing the controller, operating a friction band on the motor. The frame is pressed steel and the body is attached to it by four bolts. By removing the nuts the body may be removed and a station wagon body substituted, giving practically the advantages of two cars. The controller gives three speed variations from 6 to 19 miles an hour. A remarkable radius of action is reported to have been shown with the car in recent tests. It is claimed that on Glenville track recently the car made 124 miles with one charge and had power enough to run home and it is stated that 114 miles have been made on city streets. It is claimed that the combination of a very efficient battery, a well designed motor, ball bearings at all possible points, together with Goodrich Palmer tires and 36-inch wheels, produced these results. The car is elaborately finished and sells for \$3,000

with canopy top or \$4,000 for both canopy and station wagon tops.

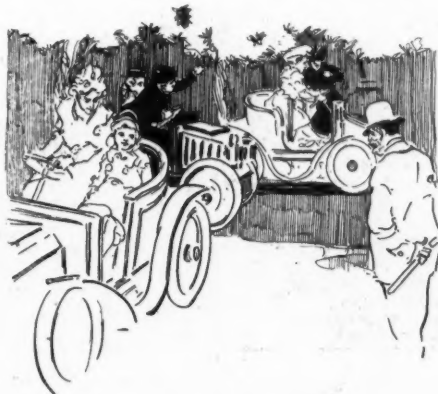
The Gaeth Motor Works, which has confined itself to local business and which builds cars to order so far as the bodies are concerned, shows an attractive touring car. It has a four-cylinder vertical motor mounted in front. The secondary shaft with exhaust cams are contained in a divided aluminum crank case. The lift of the intake valves is regulated in conjunction with the throttle. The commutator is situated below and forward of the radiator on the secondary shaft. The clutch is the internal expansion type, leather to metal, actuated by a cone and operated by a lever on the right side of car. The transmission is the planetary system, with two forward speeds and reverse, direct drive on high speed. Gears are cut from forged steel, and run in oil. The cooling system has a honeycomb radiator and tank combined, operating on the thermo-syphon system, no pump being used. The ignition is by quad vibrator coil and jump spark. Two sets of dry cells are placed in a box on the off foot board. The lubricating system has a 6-quart tank with valveless pumps furnishing oil to crank case with splash to cylinders, exhaust valve cams and shaft bearings. Drive is by bevel gear through a roller bearing propeller shaft with single universal joint to 1½-inch encased rear axle. Wheel base is 102 inches. The frame is angle steel. The front axle is 1½-inch solid steel, having downward curve in the center with forged yokes. The rear axle is two-piece with horizontally divided gear case. Each half of axle revolves in two sets of roller bearings. The body is side entrance with high back rear seat. The car sells at \$2,000, tops extra.

"Pat" Hussey, of the Hussey Drop Forge & Mfg. Co., never fails to spring something "brand new" at the Cleveland show, or any other show for that matter. The article which is making its debut this week is a new steering wheel, the handle portion of which is covered with ¼-inch coating of black gutta-percha. Mr. Hussey claims this has a yielding surface without friction or suction on the hand, eliminating all hand corns or blisters. It will not wear off like varnish and, he claims, keeps the hands cool under all weather conditions. At the same time it gives a firm grip. He also shows a line of perforated steps and step brackets recently brought out.

The management of the Automobile Garage & Repair Co. has been entirely changed around since the Baker company bought out the business. George H. Smith, formerly eastern manager for the Packard Motor Car Co., is now in charge of the business, while W. C. Anderson will take care of agencies. The company has half of Ohio on Autocars, Packards, Cadillacs and Continental tires and has sub-agencies in nearly all the larger towns.

The Reo Motor Car Co., 254 Euclid avenue, is a new one in the field. Otto Owen, a brother of R. R. Owen, sales manager for the company, is in charge of the branch. "R. R." is attending the show.

The Cameron Motor Car Co. is another newcomer. A store has been opened at 288 Erie street in charge of Dr. E. W. Gurley. The Cameron got lost on the way from Detroit and did not arrive until Tuesday afternoon. The peculiar shape of the hood caused much comment and the line is being well received.



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ESSENCE OF MOTOR CAR QUALITY

When historians and philosophers have attempted to define the characteristic differences between one nation and another, as regards modes of thinking and feeling and acting, they have always been found hopelessly snarled up in the vagueness of such terms as could be applied, saying either too much or too little, or nothing that need be understood in the same manner by all readers. If any one doubts, however, that national characteristics really exist—considering that they are so elusive to all explanation—automobilism should furnish proof, since the development as well as the popular reception of automobiles have certainly differed remarkably in the various countries. The world could ill have spared the love for a new idea, the confidence in final results and the resolute application to the new art of facts and theories borrowed from other branches of scientific knowledge, which the French have brought to bear on automobile construction. Battalions of engineers, engaged in other occupations than automobile construction, or not at all engaged, have worked with half an eye toward solution of automobile problems. Men of elegant leisure and of technical inclinations did as much in the beginning of the movement, but their places were soon taken by a much larger number of ambitious and fancy free mechanics who felt the chance of raising themselves from the workbench to a higher rung on the social and financial ladder.

The judgment displayed by all of these forces in each instance was perhaps inferior to what would be applied to a similar subject under similar circumstances in the United States, England or Germany, but it drew upon a much larger field of related industries and therefore upon a much larger number of fertile minds of respectable capacity than in the other countries.

It has been somewhat commonly supposed that the bulk of preparatory work done for the world by France largely found expression in mechanical devices or arrangements, in shapes and dimensions; in fact, in such things as the man of mere shop experience would think of first. If this has been the American conception of French methods, it has perhaps in reality been a reflection of our own tendencies in automobile work rather than of French progress. It is difficult to adduce documentary evidence in matters of this nature, but a round of inspection of our many French chassis has convinced the writer that of all things in French automobile work "shapes and dimensions" are least settled and least to be taken as models for imitation. The dimensions of motor shafts, crank pins, bearings, universal joints, gear faces, clutches, axles, knuckles, bearing balls, etc., vary among the best makers in a manner which no reference to horsepower and speed gearing can reconcile

with any system of precise calculations worked out on stress sheets, or worked out at all in any other manner than by the application of general judgment of the designer, more or less reinforced from racing experience and divers records accumulated at each factory, the value of which latter material, however, is seriously impaired by the constant changes in all the factors of which they are composed and upon which, in turn, they are supposed to bear.

Dismissing all idea of finding among French builders any stock of incredibly exact data on automobile construction, one turns with a lighter heart in other directions. The priority of the leading French designers in trying and testing new metals or alloys and new ideas in general, looms up large as an explanation of their positions in the world markets. The Jellinek-Mercedes-Maybach combination gave them a sharp tussle on many points. Genius will prevail over talent and persistence, at times. But, all in all, the priority of the French in trying and reaching definite conclusions with regard to the value of each of the hundreds of new ideas continually working to the surface from the brains of a myriad of workers, may be set down as no less than 2 years; a margin of time, however, which by dint of talent for imitation and investigation of finished products can very nicely be cut down to 1 year in other countries, except, perhaps, in the matter of the properties of various metallic alloys and their employment in various parts of automobile mechanism. Here, where ocular evidence counts for little, guesswork for less, but where co-operation between engineers employed in the different branches of metallurgical work, or mere transfusion of knowledge from one branch to another through scientific societies, technical periodicals and similar channels, counts for very much, there is occasion for considering what the French are doing, drawing freely upon all sources of information.

With this in mind the reader is first presented what is practically a translation of a synopsis by Leon Guillet, "docteur des sciences" and "Ingénieur des Arts et Manufactures," on the subject of metallurgy in automobile construction.

The influence of the automobile has been felt upon French metal production, says this authority; though not in the tonnage, markedly in its quality. To be sure, the large steel works of the eastern provinces, where the converters work night and day, producing thousands after thousands of tons of Thomas steel, including the cast phosphor steels which less than 30 years ago were the terror of the ironmaster, have not been affected by the new demands. And the great rolling mills of these works, where the ingot is taken from the very feet of the converter and transformed into sheets, tubes and wires by an uninterrupted succession of operations, have not so far handled the special automobile products.

It is in the steel works where the production of enormous quantities is not sought and scientific research is courted that the automobile builder is recognized as a regular and important customer. All the plants in the central portion of France count on him; those at Imphy, Montluçon, Unieux, Saint Chamond, Le Creusot.

The automobile builder has been an exacting customer, as indeed he ought to be, since his responsibilities to his own customers are great.

His influence upon the creation of new types of special steels can scarcely be reported accurately without a recourse to scientific terms, but a general idea may be conveyed.

Ten years ago the war and marine departments were the only consumers of the ironmasters' products who demanded anything but the ordinary steels, namely, iron-carbon alloys, containing in the form of impurities silicon, manganese and, what was worse, sulphur and phosphorus, in percentages which were reduced as much as it was found possible. Private constructors ignored the existence of products which, being only partially under control and understood, caused misgivings both as to tempering and annealing processes and with regard to the mechanical processes of forging, drawing, pressing and stamping.

Only the serious and ardent students among the metallurgists knew at that time that a revolution had already been engineered in 1888 at the Hecla works at Sheffield, where Mr. Hadfield had demonstrated the existence of a steel very rich in carbon and manganese and yet not brittle, while steels containing lower percentages of manganese broke like glass, and this special high carbon steel further showed the anomaly of becoming softer by a tempering process.

Thereafter metallurgists began to admit that the "cellular theory" as presented by Osmond and Werth in the book of that name, opened new horizons and that microscopical examination, as described by Osmond, was a matter of



ELLIOTT C. LEE—THE A. A. A.'S COCAINE

real interest—a scientific interest, it was thought. But none foresaw the leaps which steel making was going to make in consequence of those discoveries. The problem of the projectile required to pierce the armor plate and of the armor plate whose least duty was that of resisting all projectiles, passionately engaged the commercial spirit. Chrome steels, imported in France by Brustlein, had already caused a stir at the exposition of 1889. The nickel steels were just cropping out and triumphed in many tests. But the uses of these metals were as yet solely governmental.

To popularize them was reserved for automobilism. When the automobile industry began to spread French metallurgists saw quickly the opportunity it offered them. It was first the armor plate chrome and nickel steels which were employed for shafts and gears. Then followed other nickel steels and among them those of very high nickel percentage used by the war department. Despite the great difficulties in tooling them they possessed such advantages, especially in the way of reduced friction and resistance to shocks that were warmly welcomed for racing machines.

Convinced, from outside evidence, that nickel imparted a remarkable uniformity in texture and in small percentages, added much to the toughness of steels, automobile constructors

wanted to add it everywhere. Of the types then created several have remained and have become standard: the 2 per cent weldable nickel steel and the 5 or 6 per cent nickel steel.

Then trials were made with steels still more specialized. That peculiar metal, the 36 per cent extra-soft nickel steel, was used for valves, where its non-expansion under heat renders it highly serviceable. Tubes and especially pressed goods were perfected in other industries by weak alloys of nickel.

Finally the automobile springs became the object of special care. The old spring steels were abandoned, and silicium, previously well known as a means for avoiding air blisters in castings, was added in relatively large doses—from 0.7 per cent to 1.5 per cent and even 2 per cent—and raised the elastic limit of the steels remarkably. These new spring steels have since been further perfected—if indeed it is an improvement!—by the addition of tungsten, heretofore used only in the manufacture of steel tools.

Speaking of tools, it is also in the construction of automobiles that the so-called coupe-rapide steels find their principal application. They were first shown at the 1900 exposition and permit very rapid machine work without fear of losing the temper of the tools.

All these things do not go beyond the steel-maker's art. In cast bronzes the results have been no less notable and the progress in anti-friction metals for bearings is perhaps just now entering upon a new era, all mainly through the one agency: the automobile, especially the high-class automobile, with its exacting demands for a combination of strength, lightness and extreme reduction of friction and wear under most trying working conditions.

Its influence does not stop at steels and bronzes. Aluminum, this metal which did not keep all the promises it had made to the over-hopeful, now finds its most extensive use in the alloys used for shaft and gear casings, while its application to metallic carriage bodies is still continuing and may lead to new treatments of this metal by which its usefulness for a multitude of other purposes than automobile construction would be at the same time enhanced.

It need scarcely be said that M. Guillet's summary, as given above, does not include the most recent developments, which, for business reasons, remain more or less inaccessible to the investigator, and of which, anyway, it would be difficult to speak, because the time for trials and tests, as regards their value, has not yet expired; so that their usefulness particularly in automobile manufacture is unknown.

Jump Sparks

Now that Cuba has accepted automobilism all of the automobile dictionary must be translated into Spanish.

These are the days when the farmer legislator determines to again settle the question of automobile regulation for once and all.

That gasoline cocktail joke has struck the English automobile papers, and they are working it overtime, only it has thus become a petrol beverage.

If the Chicago show was, as an eastern paper has said, a local show, for mercy's sake what is one of the shows that ordinarily go by that name?

It seems to be popular for garagemen to lease old church buildings for use as automobile stations. This should furnish good material for the country editor.

Did you notice how thoroughly the eastern automobile papers "covered" the Cuban automobile tournament with the assistance of the New York daily paper stories?

The Motor World still continues to worry because Sam Miles gets a percentage of the Chicago show profits. The same condition of affairs does not worry Sam, however.

During the last year America exported automobiles and parts to fourteen countries in Europe, sixteen countries in North and South America, seven countries in Asia, three countries in Africa and to two divisions of Oceania. And yet the American automobile in-

dustry was started after the foundation was laid for the new Chicago postoffice, which is not yet finished.

This is from a Denver paper: "Automobiles will soon be a drug on the market. In a speed contest in Los Angeles, Baldwin's airship made the swiftest auto look like a deuce-spot. The auto speed cranks are disgusted with their machines and are purchas-

THE WEEK

Appellate court of northern district of Illinois dismisses injunction bill, granted by Judge Haney to John Farson and others, on a technicality.

Washington automobile railroad scheme branching out; permits asked to operate cars on many miles of roadways.

Illinois legislature has before it new state automobile bill with several drastic paragraphs; counter bill proposed.

American Automobile Association meets and with new president gets down to business.

Automobile Club of France decided to run the Bennett and grand prix events separately.

Cuban motorists wind up meet with promises of several future events on grand scale.

Meet at New Orleans very tame; fatal accident narrowly averted.

Buffalo dealers trying to rid themselves of the demonstration fakir.

Cleveland show opens with good attendance and much enthusiasm.

French drivers skeptical about the records made at Ormond, Fla.



ing airships as fast as the factories can turn them out."

One of the features of the Detroit show was the formation of the Order of the Dragon, which goes to show that automobile tradesmen know how to get a little fun out of most any situation.

Poor France! Every country seems to be anxious and capable to take a fall out of her in the automobile trade and sport.

John Farson is no longer president of the Chicago Automobile Club. Did John imagine that the advertising possibilities of the club presidency had been worked to the limit?

Motoring Illustrated, of London, says: "At the recent American shows all the foreign ambassadors were present in a body." This designation of the importers' salon as an American show is certainly an insult to some one.

France has learned that she does not control international automobilism. Having been properly spanked by the other countries for her high-handed endeavor to run the Bennett and grand prix races together, she has now promised to be good and run these events to suit the majority.

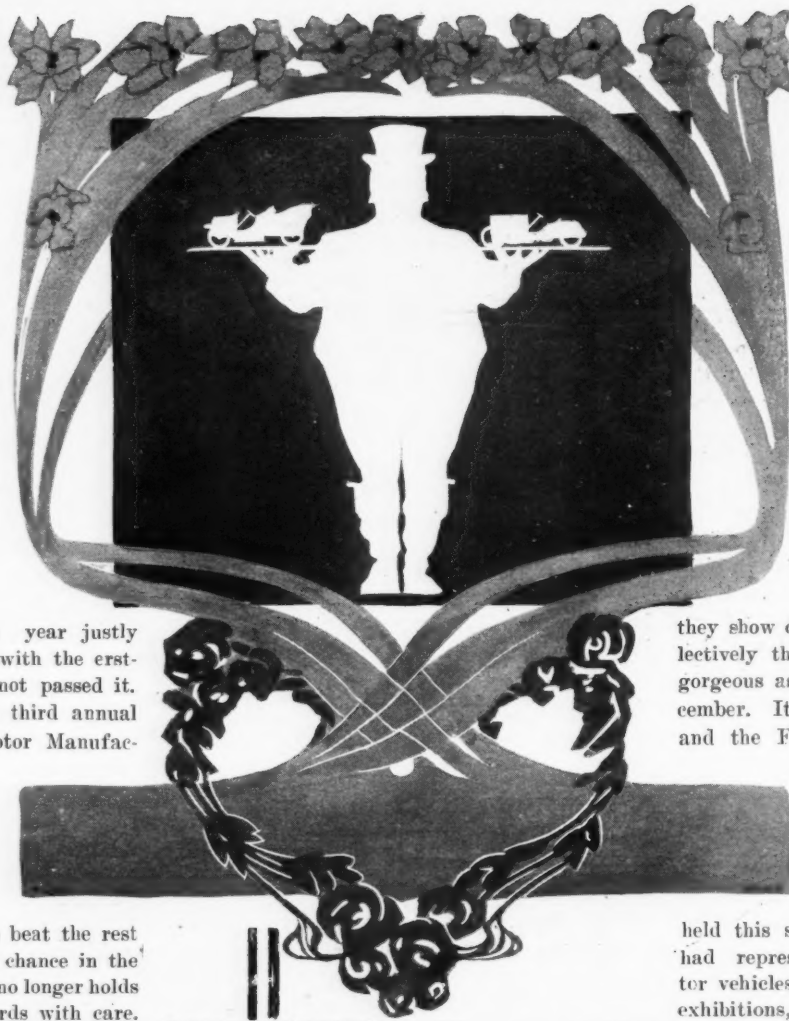
Six makes of American cars were represented at the big London show. Only one English car was represented at the American show in Madison Square garden, New York. The importing and exporting relations between the United States and Great Britain are becoming very apparent.

JOHN BULL'S

London, England, Feb. 11—Staff correspondence—To one who attended the salon de Paris, the salon de l'automobile au grand palais, or the Paris automobile show, whichever you choose to call it, and has also attended the American and later the present English show, there is but one conclusion—France is no longer a tin god in the automobile industry. From personal observation or from reports from those who have been at the shows of the different nations it is obvious that, while France is as good an automobile builder as ever, the other nations are much more expert than they have been, and this year justly claim the right to stand in line with the erstwhile leader, even if they have not passed it.

This latest of big shows, the third annual exhibition of the Society of Motor Manufacturers and Traders, which opened yesterday morning at Olympia, is but another and a positive demonstration of the fact that motor car building is a game at which more than one can play, and that France to beat the rest of the world must take the same chance in the fortunes of commercial war—she no longer holds all the trumps and must play cards with care.

Spread over the 120,000 square feet of floor space beneath the great dome that once echoed and re-echoed the tumult of Buffalo Bill's well-reproduced picture of the American plains are about 750 automobiles—English, French, Belgian, German, Italian and American. Over half of them are English and they need not blush, for they are an honor to the company they keep. And this might be said of all of the nationalities present, for evidently all of the nations have learned to turn the trick, and there need be no apology with the introduction of any of them to international motor trade.

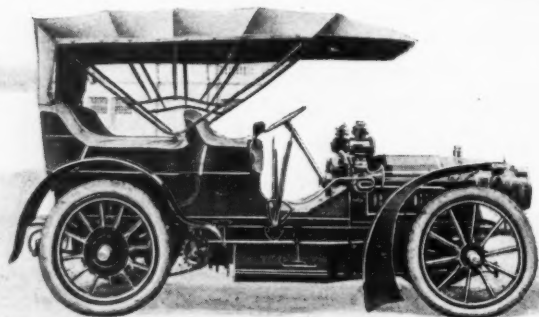
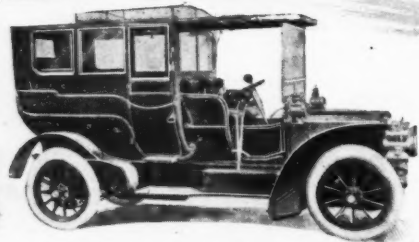


GREAT SHOW

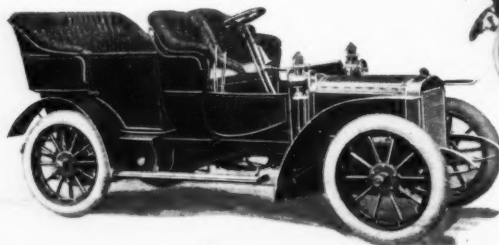
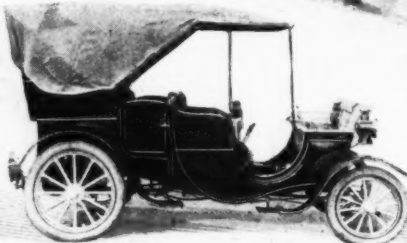
Perhaps the English car is not in any one particular sense better than the cars of continental Europe or America. But the Londoner—at least the real Londoner, not the continental loving Britisher, but the one who wraps his soul as well as his chest in the Union Jack—likes to think so, and he is justified in his national pride inasmuch as the British cars as a class are so nearly on a par with those of continental Europe that by adding the qualification "for British service," he may probably justify his claim that they are best.

There are nearly three hundred exhibitors present and they show cars to the value of \$2,500,000; collectively the display is not so spectacular or gorgeous as that in the Grand palais last December. It ranks between the American show and the French show in pictorial tone and composition. Commercially there is no way of telling what honor it deserves until it is over, but in variety of types represented it exceeds any automobile show that has been

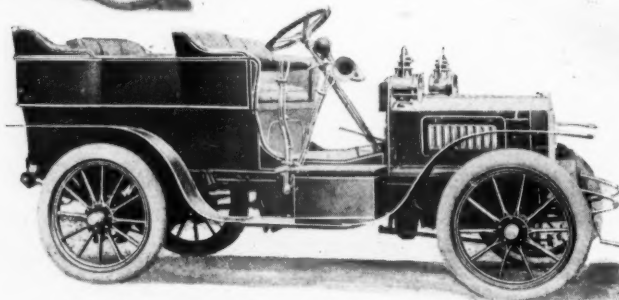
held this season. Of course the French show had representatives of all classes of motor vehicles, as probably did most of the other exhibitions, but the importance of some of the more staid and less fickle branches of the motor car industry seems to have been better appreciated by the British trade in the establishment of this exhibition. Samples of commercial cars and other special service vehicles are not only here as a hint to the visitor that there is something more in automobile building than the production of pleasure conveyances, but they are here in sufficient number, variety and practicability of form to warrant the assertion that England has relative to the general advance of her motor trade progressed further in the commercial line than any other country. And yet



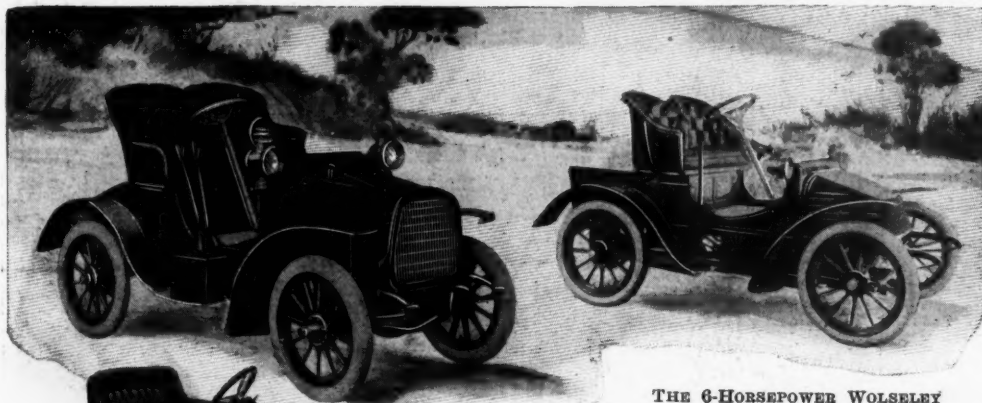
THE MAUDSLEY
THE CROSSLEY



THE ENGLISH DURYEA
THE BEAUFORT



THE SWIFT
THE BROWN



THE 6-HORSEPOWER WOLSELEY

THE MOBILE
THE 6-HORSEPOWER ROVER

with all this magnificence of British enterprise shown graphically in such a way that the visitor to the show can absorb its real meaning with a single sweep of the eye that surveys the huge signs that proclaim the nationality of the



THE HUMBER



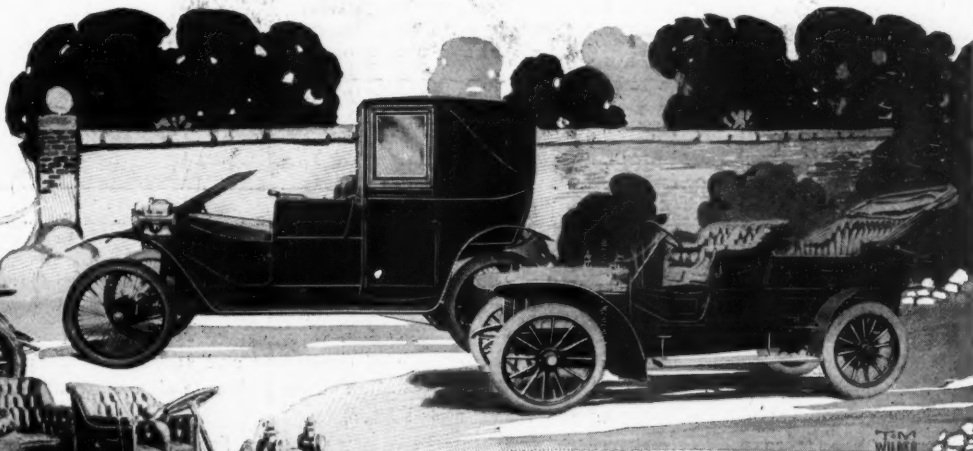
THE CLYDE

vehicles beneath them, this opportunity is such as Englishmen have never had before to claim their own greatness in the world of automobiling.

One of the chief features of the show, and one of its chief merits as compared to the Paris show is, according to the stories in the British papers, that Olympia, instead of being floored with gravel as was the Grand palais, has a "firm, hard floor," which enables one to wander around the many stands for hours without becoming tired in the feet, and that consequently dainty women with dainty footwear may tour the whole show without danger of collapse. Presuming that the reader has read as many, or nearly as many, show stories as the writer has written, and that he is just as familiar with the "tastily-colored bunting" and the "thousands of clustered flags and the myriads of electric lights that flash and gleam and sparkle and lend great brilliance to the whole affair," there is no real need of entering into detail concerning the decoration of this show. Argent Archer's photographs accompanying this

story tell the tale more quickly and more graphically than could the written words of a scribe who has festooned automobile shows—in print—with enough bunting, flags, electricity and general grandeur to stock an American department store. In plain American language the show as a spectacle

THE LANCASTER LANDAULETTE



THE SPEEDWELL

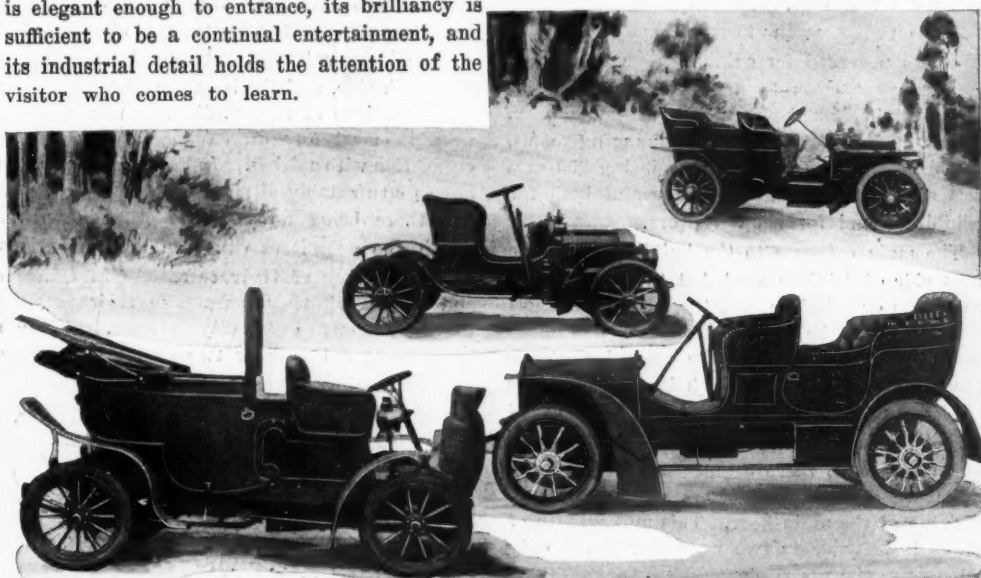
this year will be the Cordingley in Agricultural hall next March.

Of course the Stanley show at Agricultural hall last November was a decided success, but this, the outgrowth of the most famous bicycle show of the best years of the cycle trade, was really a motor cycle exhibition, and its four

is a crackerjack. It is big enough to awe, it is elegant enough to entrance, its brilliancy is sufficient to be a continual entertainment, and its industrial detail holds the attention of the visitor who comes to learn.

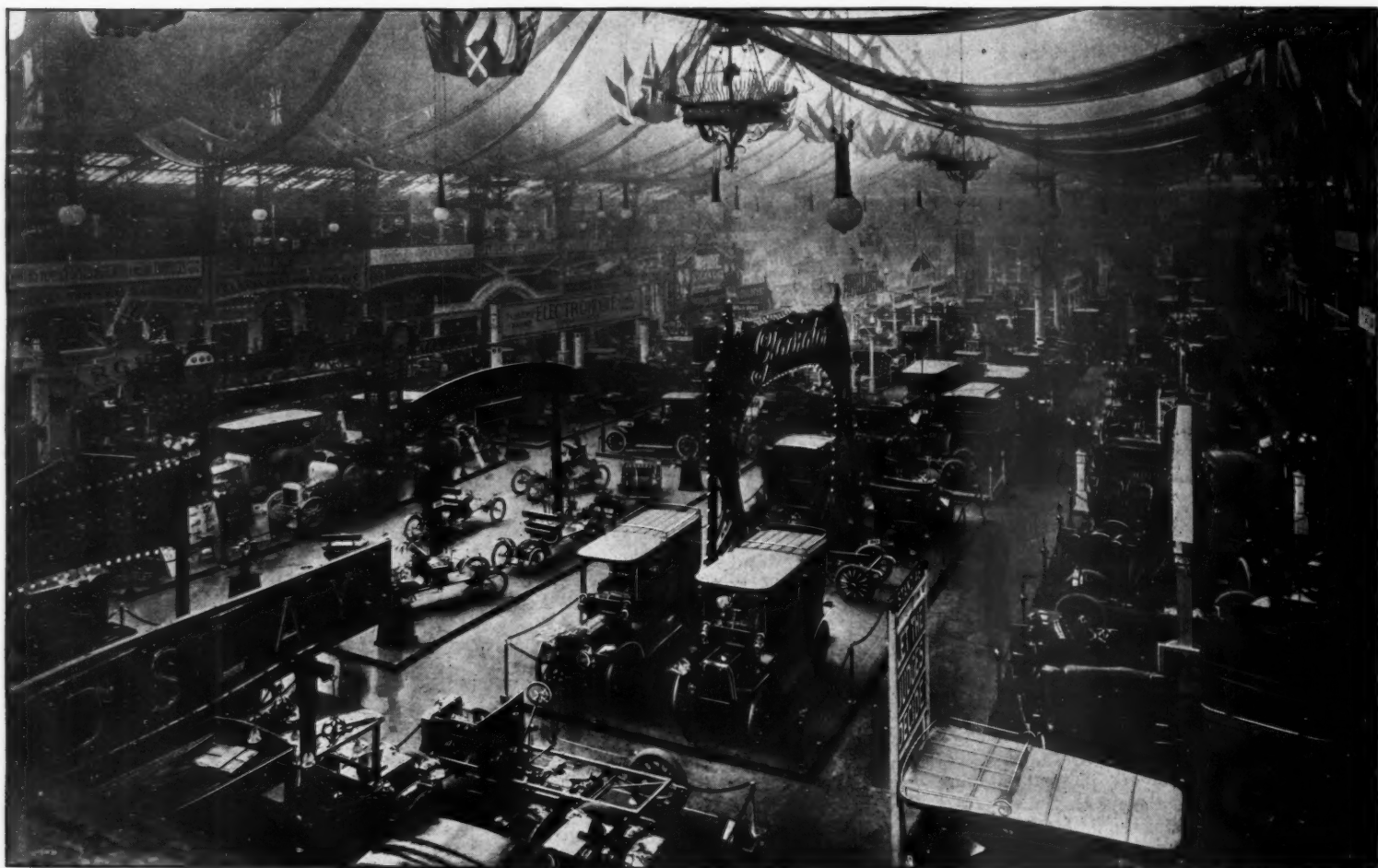
THE EAGLE

THE SIDDELEY



NAPIER LANDAULETTE

WHITLOCK-ASTER



ONE VIEW OF THE MAIN FLOOR OF THE ENGLISH SHOW AT OLYMPIA

wheelers were of that type which is just now without family name, being the mongrels that are more than motor cycles and not quite automobiles, but which it is becoming rapidly apparent are bound to occupy an important place in the motor industry on account of the fact that they appeal to the general public more strongly than do those cars of greater pretense, the purchase of which requires a well-fattened pocketbook.

In preparing for the present show the management undertook and accomplished a task that was almost stupendous as show preparations go. The big shed on Addison road was not in many particulars adapted to an automobile exhibition, and in spending the \$75,000 that went to make it ready for the displays very little was left of the original structure but the walls and roof. The total available floor space on the main floor, balcony and annex was prepared for exhibition purposes, and a permanent concrete floor was laid, electric light establishment installed; accommodation rooms, such as restaurants and lounging rooms, established. A garage accommodating 300 cars was also provided; this to be useful both for exhibitors and for show visitors.

The main entrance to the building is on the west side of Addison road, but there are minor entrances on all sides, and the building extends through to Blythe road on the west. The main floor is rectangular with the exception of the annex at the west end, which is circular. The spaces are laid out by the establishment of parallel aisles running in both directions at frequent intervals, there being generally speaking not more than two exhibitors within any subdivision of the main floor. This multiplicity of aisles is valuable in two ways, for it not only allows the visitors ready access to any exhibit, but permits the exhibitors to erect that pecu-

liar style of stand which is characteristic of European shows as differentiated from those of America. In other words, the common scheme of decoration and advertisement is the combination of an elaborate sign with substantial pillars.

Of course the main floor is principally occupied by vehicles, the exhibits of sundries, appurtenances and parts being mainly in the gallery. The exhibits of commercial, other heavy vehicles for special service and motor boats are in the western end of the building. This grouping of such exhibits renders their representation more important than though they were scattered over the main floor. Prominently located on the main floor are the exhibits of the American cars, the White steamer, the Winton, the Pope-Toledo, the Oldsmobile, the Orient and the Cadillac. The dining room is at the northeast corner, the grill room at the right of the entrance, the garage midway of the south side, and the bars are placed liberally in all sections of the building, so that a short walk in most any direction will put you in connection with a drink. In location the show is not so comfortably situated as the Crystal palace, there being no immense grounds within which the exhibitors can give demonstrations of the running of their cars. As in Chicago and New York they must take their possible customers out over city streets, although by crossing a bridge or two they strike excel-

lent roads which are a motoring delight.

Despite the long preparation necessary to put the building into shape, there was the usual last-minute rush. Two days before the show the building was the usual scene of great activity in the way of booth decoration. There were only a few cars on hand in the morning, but late in the afternoon they began to arrive and when the show opened yesterday the majority of the exhibits were in place, a greater majority, in fact, than at most shows on opening day. Thus when the prince came—ahead of the vulgar public, so that he and the princess could carefully inspect the exhibits without fear of social contamination—he was welcomed by an exhibition of which he could feel justly proud. The royal party, in addition to the Prince and Princess of Wales, included Sidney Straker, president of the Society of Manufacturers and Traders; Colonel Holden, of the Automobile Club of Great Britain and Ireland; some M. P. "gents" including J. Scott Montagu, and the usual following of "others." The prince looked at most of the common exhibits, complimented some of the exhibitors, and warmed up particularly to the Daimler people, whose cars are used both by the prince and his papa.

Really the most important feature of the government's informal connection with the opening of the show was Lord Stanley's speech at the inaugural luncheon. The postmaster general referred particularly to the commercial side of automobiling, and his references to the service of automobiles in the postal department were indeed encouraging to those who have the more sober interests of the industry at heart. In part he said: "At any rate, I have been in office long enough to see in postal work the growth of the use of the automobile. A contract signed by me during the last 4 or 5



days is typical of what will come. It is only the beginning of the great future. There is a postal service now running by mail coaches between here and Brighton that is to be superseded by automobiles. This automobile service would carry 50 per cent more matter, it would by its better speed give facilities for letter posting, both here and at Brighton, and it would be cheaper than the other service. The new motor mails were being undertaken by the large firm which had been most enterprising in putting motor omnibuses on the London streets, and one of the provisions that the mails were to run on the same chassis as the omnibuses, so that if there were a breakdown it would only take a short time to transfer the mails to another chassis."

The show is all right.

HARTFORD SHOW SOON

Hartford, Conn., Feb. 20—Arrangements for the Hartford automobile show are now going forward and from indications it appears that the show will be one of the most attractive of the small shows to be given in the country. One of the best things to be said of the show is the fact that it shows what beautiful harmony exists between the several agents and manufacturers in Hartford, who have practically agreed at this time to participate in the show in spite of the fact that it is to be held in the garage of the Palace Automobile Co., one of the largest buildings in Hartford. The show that was given in the same station last year was practically a display of the cars that were sold through the agency of the Palace company. This year the other agents have been invited to participate in the show and the fact that the invitations have been tentatively accepted shows how popular the Darts, owners of the Palace station, are with their competitors.

DETROIT'S SHOW CLOSED

Declared Good From Local View Point, but Not Many Sales Were Claimed to Have Been Made

Detroit, Mich., Feb. 20—The doors of the Light Guard armory have been closed upon automobiling for at least a year. The people who nightly packed the building as visitors to the annual local motor car show have returned to the usual paths of entertainment. The local agents have taken the exhibit cars to their stores, and those of the erstwhile exhibitors who were show circuit-chasing manufacturers have packed their trunks and moved on to Cleveland.

Some of the cars, too, that are being given an express train tour of the country, have also fled to the old trade center on Lake Erie. There is nothing left of the show but the recollection of it, the promoters' profit and a few orders. For few indeed were the orders placed at the show. To the Detroiters the show seemed all right, and it was all right in some ways. Excellently decorated and full to the brim of its limited capacity with excellent exhibits, it was an exceptionally interesting small show. True, the allotment of space did not seem consistent to the casual observer from the outside, but even at that most of the exhibits were representative enough of the respective lines to be worth the visitor's attention. That the show was well attended cannot be denied, and the aisle space each evening was truly jammed with Detroiters, and people from surrounding territory. But they did not come to buy, they came to see the show, and the majority did not look like probable automobile customers under any circumstances. All of the different kinds of people that Detroit can

boast of were there, but not a buying crowd, and while most of the exhibitors of cars reported each a few sales, there were few of them to say that the show was actually profitable from a selling point of view. Naturally the Detroit makers received the bulk of the public's attention.

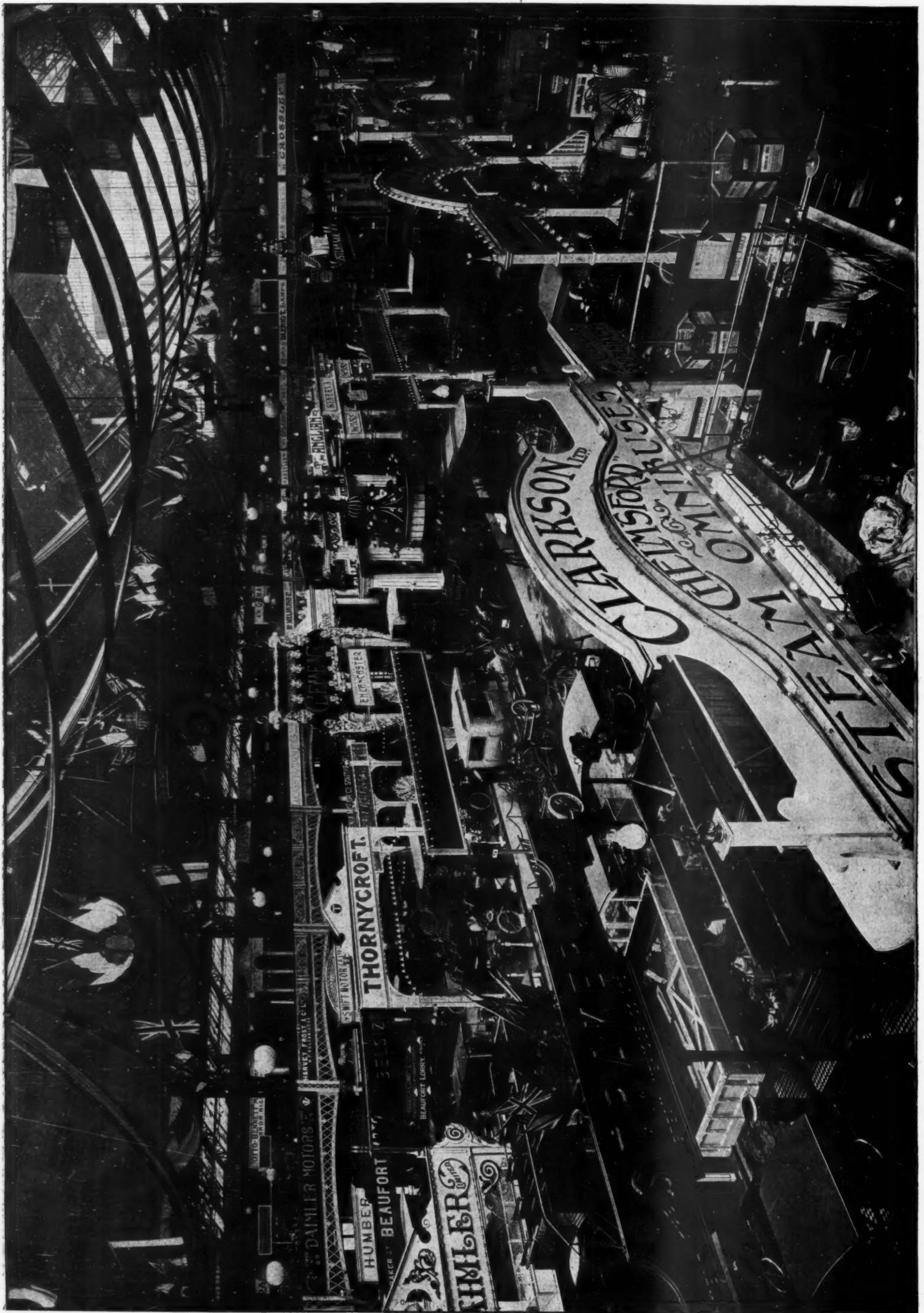
In the gallery there was little or nothing doing in the way of sales. The aisle space was so limited that it was hard to move about and the people simply made their difficult way past the exhibits in order to feel that they had not missed anything worth seeing. The subscription agent of an automobile paper explained the situation to a *MOTOR AGE* man as follows: "I have not done much business so far, but expect record-breaking sales Saturday, because most of the people to whom I talked say that they wish to subscribe for an automobile paper, and will be back Saturday to do so; Saturday being pay day."

There was little demonstration on account of the severely cold weather and a general lack of interest of the public in anything that approached the placing of an order. The local exhibitors enjoyed the show because it was their show, and the experienced followers of shows, big and little, had what fun they could in any old way. A smoker and vaudeville broke the monotony of one evening, and the good fellowship which always surrounds circuit chasers helped to keep up a proper degree of enthusiasm. It was not hard, however, to get the average exhibitor to leave his booth on any of the ordinary social excuses, for his time was usually his own for a time.

Just what the show meant as a factor of the season's trade functions is hard to tell, but it is probably true that it did a good deal to help the growing sentiment in the trade toward the abolition of all but a couple of big national exhibitions.



AN ENGLISHMAN'S IDEA OF THE CROWD AT THE DETROIT SHOW—PUZZLE, FIND JOHN FARSON



GENERAL VIEW OF THE MAIN FLOOR OF THE ENGLISH SHOW AT OLYMPIA

CUBA'S MOTOR MEET OVER



THE TIMING OF THE 100-MILE RACE—THE LUCKY MOTOR AGE MAN HOLDS HIS ONE-DOLLAR INGER-SOLL WATCH AT THE TIMER'S SIDE

Havana, Cuba, Feb. 18—Cuba's inaugural automobile carnival has been brought to a successful conclusion. The last of us newspaper men are leaving for Miami on the steamer Martinique this afternoon. H. W. Fletcher, Joe Tracy, and the crews of their cars go with us. So do the three racing cars. Major Miller sails for New York and the White party for Tampa tomorrow. Mr. and Mrs. E. R. Thomas and William Wallace will delay their departure several days. Senator Morgan will take the boat for Miami on Monday. Mr. and Mrs. Hawley will not be able to leave for a week yet on account of Mr. Hawley's injuries.

The presentation of prizes took place yesterday. Mr. Conill received his cup from the mayor, Senor O'Farrill, at the palace in the afternoon.

The alcalde in presenting the cup told Mr. Conill that it was eminently fit that the trophy in Havana's first international races should remain in Havana, and it was cause for congratulation that it should have been won by Mr. Conill, who had worked so hard to bring about the races and make them a success.

The mayor dwelt at some length upon the vast benefits accruing to Havana from the success of the races, pointing out how prominently they have brought the country before the world, and foretelling immeasurably greater success for future years, concluding with the declaration that Cuba will next year have a course excelling any in the world.

Mr. Conill replied that the genuine spirit in which the cup was yielded to him doubled its value and said that his greatest reward, however, was that his efforts to bring to a successful conclusion a Cuban automobile meet had seemed to have met with some measure of success.

The MOTOR AGE man then said a few words to the mayor on behalf of the visitors, which were translated to his honor by Senor Mendoza, expressing the gratification of the Americans that a Cuban victory would mean a big boom for automobiling and motor car racing in Cuba and congratulating the Cubans that the cup had been won by so worthy a sportsman as Senor Conill, to whose efforts, aided by the hustle of Senator Morgan, the success of the carnival was mainly due.

The alcalde in reply expressed the gratitude Cubans felt for what Americans had done to-

ward securing their freedom and the assurance that the meeting of the men of the two nations in sport would create even closer ties between the two republics.

In a subsequent informal communication the



ERNESTO CARRICABURO, THE WILD-EYED CUBAN, DRIVING CONILL'S MERCEDES TO VICTORY IN THE 100-MILE ROAD RACE FOR THE HAVANA CUP

mayor suggested that Senor Conill and his assistants apply direct to the Cuban congress for an appropriation for next year's tourna-

ment, which would be the means of making many Americans aware of the beauties and resources of Cuba. It is understood that next year it is proposed to offer a permanent challenge trophy of the value of \$3,000 in addition to other rich prizes already furnished by citizens. Several merchants have come to Senator Morgan and announced their intention of forming a business men's association for the entertainment of visiting newspaper men and aiding in all projects that will tend to the advertisement of Cuba as a winter resort and of her wonderful resources as yet but comparatively little developed. Already the officials are figuring on the extension of the good road system so that a circular course for long distance races may be available next year.

The same evening at the Hotel Telegrafo the cups won by H. W. Fletcher and the gold medals gained by Joe Tracy, who piloted Major Miller's Renault, and H. A. Robinson, who drove Senor Mendoza's de Dietrich, within the time limit were presented with due accompaniment of champagne and speeches.

It is said that E. R. Thomas will go shortly to Paris, where he will place orders for a 120-horsepower racing car for the track circuit and the Vanderbilt cup race. He is as full of enthusiasm as ever for the racing game.

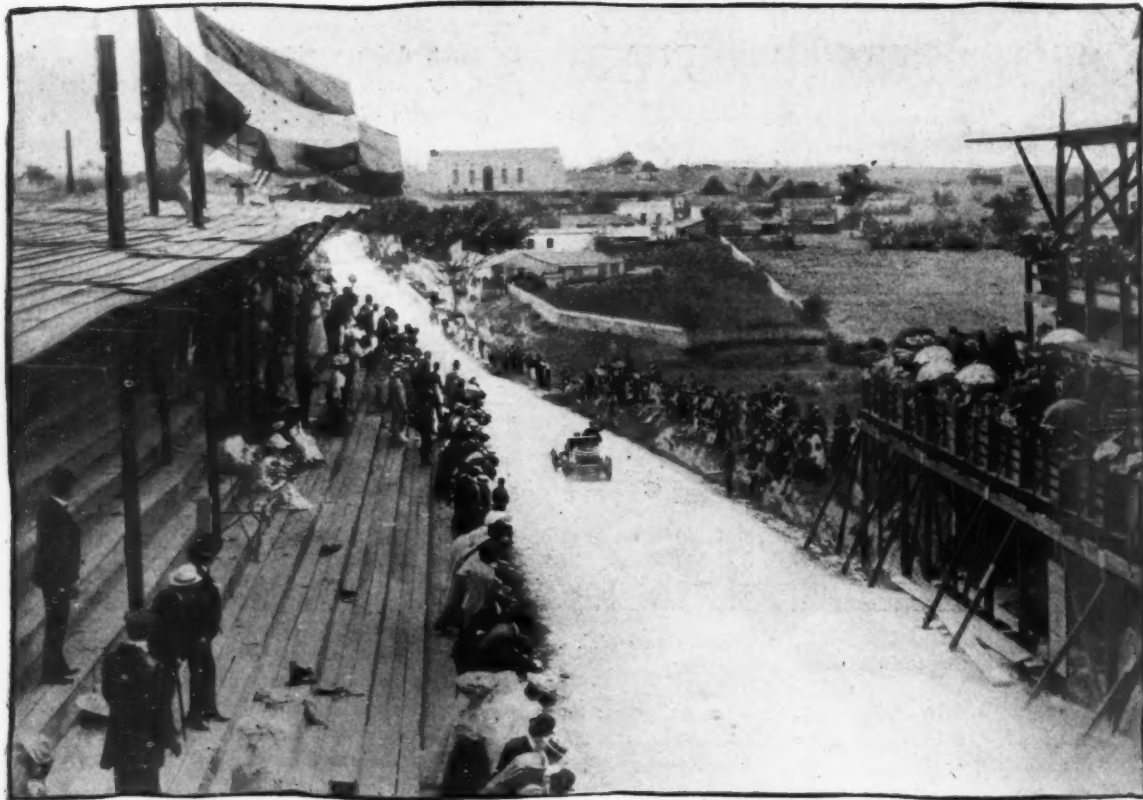
The great problem to be solved before next year's tournament is that of hotel accommodations which as they exist at present would be entirely inadequate to accommodate the throng of automobilists and motor car race followers sure to meet at Cuba next year. Mr. Conill tells the writer that he is in negotiation with an American syndicate to give it land in the suburbs for the erection of a \$700,000 hotel.

After the big road race the Cubans who were directly responsible for the preparations for the tournament made up their minds to do everything possible to make the annual Cuban meeting fully as interesting and possibly greater than the Ormond affair. "We want to" is the motto of the enthusiastic motorists, and they will spend thousands of dollars if that will help make the meet greater than the American event.

The present talk is in favor of an early tournament next year to precede Ormond. It is probable that the present committee will be largely increased and embrace several Americans either residents or having large Cuban interests.



THE NEWSPAPER MEN AND THE NATIVES AT AN OPEN-AIR BREAKFAST—AT THE LEFT IN WHITE COAT AND CAP IS LAZARNICK, THE MOTOR AGE PHOTOGRAPHER, AND AT THE RIGHT IN A BLACK COAT AND A SMILE IS WETMORE, THE MOTOR AGE SCRIBE



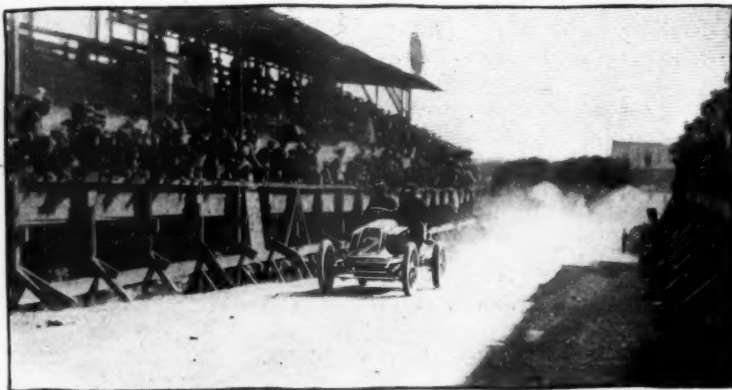
GENERAL VIEW FROM JUDGES' STAND AT TIME OF 100-MILE RACE



CARRICABURO, THE "HOT DOG" OF CUBA'S RACING CHAUFFEURS



FLETCHER FINISHING HIS RECORD MILE



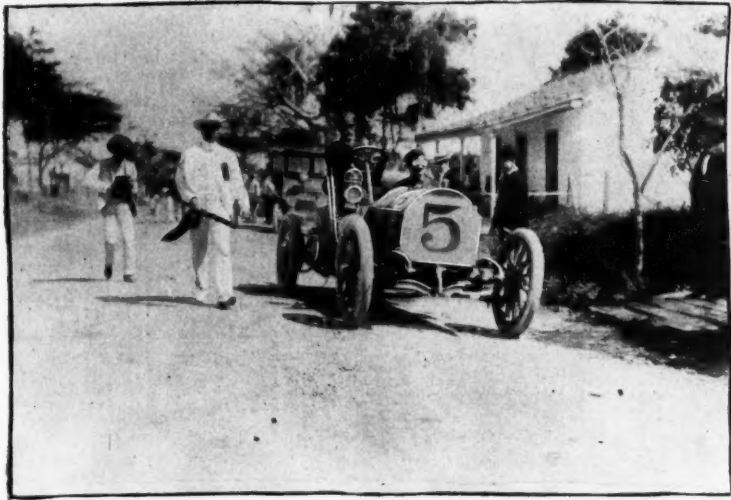
TRACY FLASHING BY THE GRAND STAND IN THE RENAULT



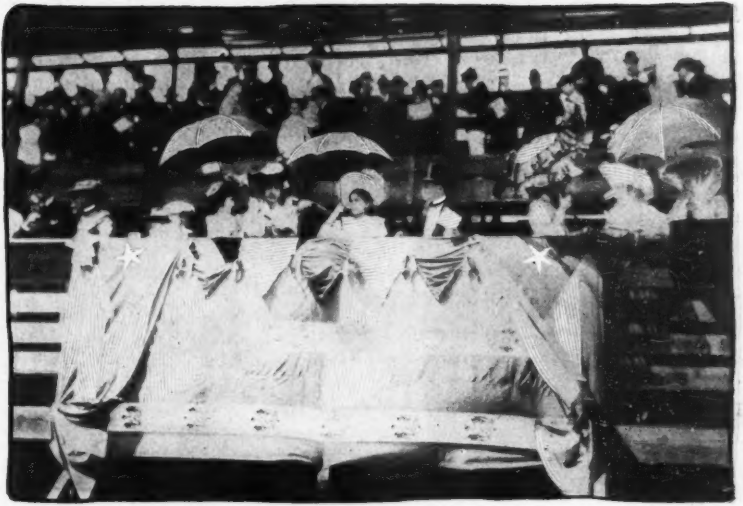
U. S. MINISTER SQUIRES,
THE REFEREE OF THE RACES



CARRICABURO—CUBAN—MERCEDES—WINNER



CARRICABURO IN THE MERCEDES WITH WHICH HE WON THE 100-MILE RACE



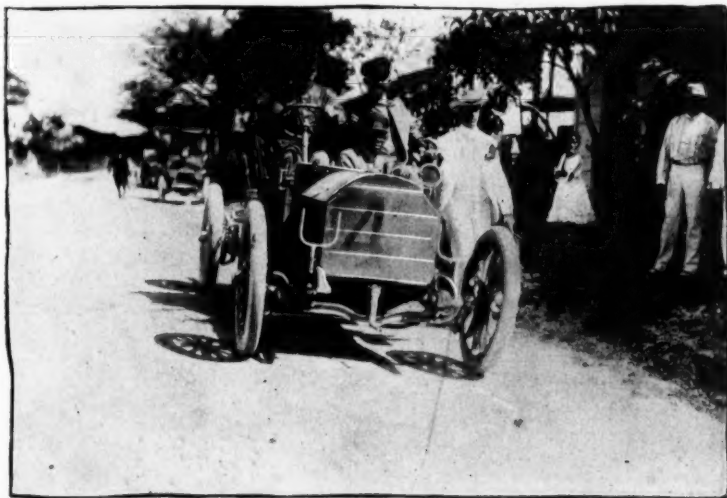
PRESIDENT PALMA OF CUBA WATCHES THE 100-MILE RACE



THE DE DIETRICH MADE LOTS OF SMOKE AT THE START



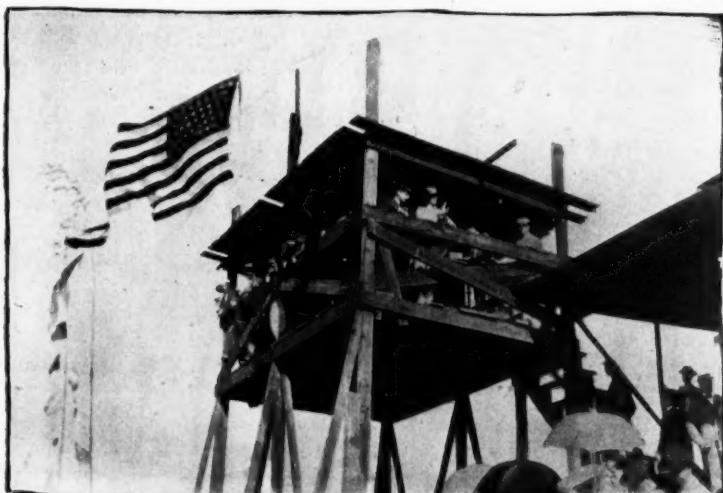
JOE TRACY GETTING HIS RENAULT READY



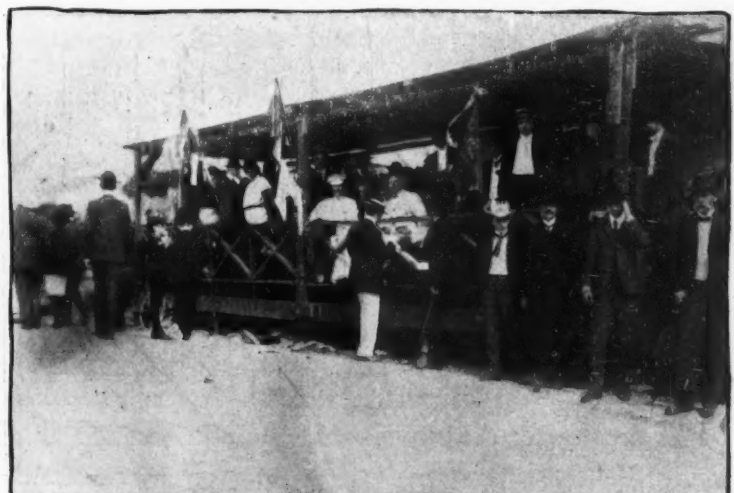
MARK IN THE 40-HORSEPOWER MERCEDES



FLETCHER AT THE TIME HE MADE HIS STANDING START MILE RECORD



THE JUDGES' STAND



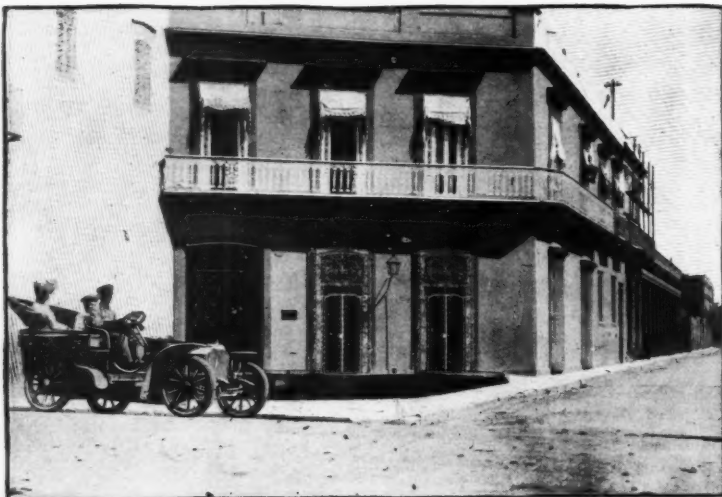
WATCHING THE SHORT DISTANCE RACES



THE PRESIDENT'S REVIEWING STAND AT THE FLOWER PARADE



E. R. THOMAS, AN HAVANA STOGIE AND SOME OF THE BUNCH



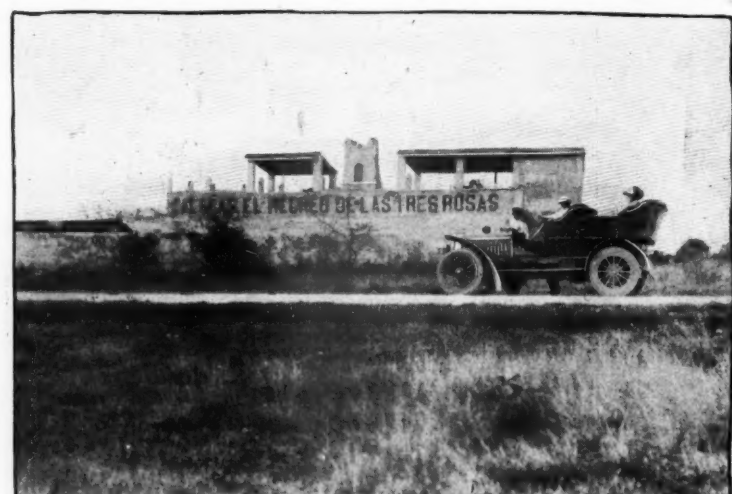
RESIDENCE OF U. S. MINISTER SQUIRES—ALSO HIS AUTOMOBILE



THE MOTOR AGE HEADQUARTERS ON THE ROOF OF THE TELEGRAFO



THE USEFUL DURYEA AND THE USEFUL WAGONETTE OF HAVANA



ALONG THE ROAD RACE COURSE IN A COLUMBIA



HAVANA IS PICTURESQUE IF UNEVENTFUL



A TYPICAL CUBAN DWELLING ON THE ROAD RACE COURSE

MOTOR BOAT SHOW OPEN

First National Exhibition Begins Tuesday in New York with a Record-Breaking Crowd

New York, N. Y., Feb. 22—Special telegram—America's first national motor boat exhibition was opened in Madison Square garden last night in conjunction with the regular sportsmen's show. Rear Admiral Coghlan, U. S. N., representing Secretary Morton of the navy, formally opened the affair with a record crowd filling the aisles and stands.

Undoubtedly this year's show is the most unique ever held in Madison Square garden, for it includes everything imaginable for sportsmen and a complete display of motor boat products of foreign and American manufacture. The largest indoor lagoon ever built—containing 460,000 gallons of water—occupies most of the main floor. In the center there is an island holding an elevated platform on which the fly casters have their fun. In the course of his remarks Admiral Coghlan, of "Hoch der Kaiser" fame, who was attended by his staff, declared his firm belief in the future of the motor boat. Among other things he said:

"The exhibition tonight marks an epoch in our mode of water travel, as well as our advance in water sport. The motor boat, as you know, is a distinct improvement. It has always been a desideratum in water travel to reduce the weight of machinery and gain power. This led to the magnificent reciprocating steam engines and boilers of the present day. Still, they are not all that can be desired and the steam motor in the shape of the turbine is taking their place.

"The inventive genius of man has been hard at work trying to get nearer perfection. This motor advance in the line of water travel has taken the usual course of all inventions where big money interests have been involved. The natural conservatism of moneyed men has forced inventors to demonstrate the utility of the motor in the smaller ways; men do not care to risk large fortunes on what might be called untried methods and machinery. The motor boat is now, in my opinion, 'here to stay.'

"The navies of the world, the most conservative of all institutions, have adopted it as the only solution of submarine boating—and in that line we have already met with a great measure of success. In the smaller boats carried by the men-of-war for every day use, a great saving of weight, which increases correspondingly the carrying capacity of the boats, has been attained, and so soon as prejudices against carrying on board vessels such inflammable substances as gasoline is overcome, a still further advance in this direction will be made.

"Such exhibitions as the present do the greatest amount of good and should be repeated frequently. We at present see that motors are supplied to great mercantile advantage in many of the fishing and trading craft along the coast—anyone can appreciate the value, even in money, of getting a cargo of fish to market in the shortest possible time, and also of getting fruits and even passengers to the destination in spite of calm weather."

There is a decided advantage for the manufacturers in being able to show their boats

in the winter with opportunity to take prospective buyers for a ride around the lagoon. The following is a complete list of the exhibitors of motor boats and accessories:

Launches, motor boats, etc.—Truscott Boat Mfg. Co., Newbury & Dunham, American de Dietrich Motor Car Co., E. H. Gotshalk Co., Williams, Whittelsey Co., Buffalo Gasoline Motor Co., H. Neubauer, Palais de L'Automobile, Lamb Boat and Engine Co., Lozier Motor Co., Gas Engine and Power Co. and Charles L. Seabury & Co., Standard Motor Construction Co., Electric Launch Co., James Craig, Jr., Smith & Mabley, Siegel-Cooper Co., Pierce Engine Co., Panhard & Levassor.

Motors and engines—August Mletzy, Clifton Motor Works, Mackay Engineering Co., Richardson Engineering Co., Spaulding Gas Engine Co., Milanus Motor Works, Eagle Bicycle Mfg. Co., H. W. Hubbard, Lacy Bros., Brown, Cochran Co., H. W. Jeffers, William H. Brodie Co., Palmer Bros., Edison Mfg. Co., Smalley Motor Co., Carlyle Johnson Machine Co., Isham Co., Trebert Automobile and Marine Motor Co., C. L. Altemus & Co., Shaw Propulsion Co., Bankers and Merchants Agency Co., George Henry Cowen, R. H. Ingersoll & Bro., Meyer, Limited, Klean-Al Mfg. Co., Blauvelt Knitting Co., E. M. Grunwaldt, Yeager Furniture Co., A. Touvet & Son, Gas Engine Whistle Co., Little Giant Mfg. Co., George Crowley, Charles E. Miller, Charles F. Splittdorf.

PLANNING BIG CONTESTS

St. Paul, Minn., Feb. 20—The Twin City automobile promoters are renewing the talk of a meet with Barney Oldfield as the star feature, and the plans are being prepared far enough in advance so that it is believed the project will be a go. The local enthusiasts tried to get Oldfield here a year ago, and succeeded in getting A. C. Webb, who made a big hit with his Pope-Toledo. It is now planned to have a meet on one day of the annual state fair. In Minnesota, the state fair is the biggest event of the year, and the attendance frequently passed the 50,000 mark. Last year the fair managers would not listen to the automobile men, and, in fact, had the association given up a day to the automobiles, the weather would have killed the meet.

The talk of a meet at the fair is again being talked, and representatives from both cities will go before the fair association this time with plenty of backing. The plan is to bring Oldfield, Webb, Winchester, and one or two other famous drivers here, and make the affair a spectacular one. Whether or not the state fair meet is held, there will be a number of interesting events in the Twin Cities during the summer. The Kenwood hill-climbing contests, which have become one of the features of the season in Minneapolis, will be renewed as soon as the roads open in good shape for the summer.

THREE FOR FIRST PLACE

London, England, Feb. 11—A cablegram was received today from Calcutta, India, stating that two English and one French car are tied for first place in the Calcutta-Asansol and return competition, run over a distance of 260 miles yesterday and today. The de Dietrich car, which was the first to finish in the recent 900-mile reliability trial from Delhi to Bombay, was the French car referred to, while a Thornycroft and a Lanchester were the two successful British-made firsts. The committee on awards will decide which one of the three cars is to be awarded the cup intended for the winner and there is keen speculation as to France again taking the prize, which would be her second victory from among more than a score of competitors in the second motor car competition ever held in India.

FRENCH CLUB GIVES IN

Decides to Run Bennett and Grand Prix Events as Distinct Races and 2 Weeks Apart

Paris, France, Feb. 20—Special cablegram—The Bennett cup race will be run independently of the grand prix of the Automobile Club of France; at least 2 weeks will elapse between the two events, and in order to be able to meet the heavy expense connected with the cup race, it was agreed that the clubs of the various countries represented in the event shall share in the expenses. These are the important decisions which were made at the special meeting of the sporting committee of the Automobile Club of France, held today, and at which delegates from the German, English, American, Austrian, Italian and Belgian clubs took part.

The events of the day may be considered as a Waterloo for the Automobile Club of France, inasmuch as it was decidedly opposed to having the Bennett and the grand prix races run separately. But it was a case of one to seven, as all of the seven countries represented had long ago decided that the Frenchmen's stand was unreasonable and that unless they changed their former ruling in the matter no foreign club would compete, either in the Bennett or in the grand prix. In fact, upon the suggestion of influential members of the Automobile Club of Great Britain and Ireland it was practically decided among all the foreigners that they would put France on the blacklist and urge their countrymen not to take part in any event held in that country unless their demands were given recognition.

While the decisions of yesterday may be considered my many as settling the whole trouble in a satisfactory manner, it is nevertheless a fact that the situation is far from being in that shape. A few days before it became known that yesterday's meeting would take place, several manufacturers who had entered cars for the French eliminating race had an informal meeting, at which they decided that if the Automobile Club of France gave in to the requests of the foreign clubs to separate the cup race from the grand prix, they would not take part in the former event. Among the concerns which took this stand are Mors, de Dietrich, Clement, Darraeq and Renault. It was rumored that Panhard and Richard-Brasier would join.

It is difficult to foretell what the ultimate outcome will be from the French manufacturing point of view, but it is certain the foreign makers will now renew their efforts and will be largely represented. It is even possible that Belgium will be represented, inasmuch as the makers of the Pipe, who had originally entered three cars but had withdrawn them when they found the grand prix and the Bennett race were to be run together, may now be allowed to reenter their cars.

The sanction of the French government was obtained for the Bennett cup race a few days ago when M. Stienne, minister of the interior, had the Automobile Club of France informed that the matter had been considered at one of the recent minister council meetings and that he had decided to grant the necessary permission. This, however, did not refer to the grand prix and it will probably depend upon the outcome of the cup race whether another sanction will be granted for the grand prix.

DEMONSTRATION ABUSES

Buffalo Dealers Trying To Devise Some Scheme To Remedy the Evil That Now Exists

Buffalo, N. Y., Feb. 21—One of the problems confronting Buffalo's automobile dealers at the opening of the season is the question of demonstration trips and the abuses to which the practice has grown. Some of the dealers reckon their losses through impositions of this sort in the hundreds of dollars for a single season.

After a general canvass of the situation the MOTOR AGE man has learned that every dealer in Buffalo would be glad if some method could be devised by which the trade might protect itself against persons who ask for demonstration trips when they have no idea of buying cars. The tradesmen admit that they are fooled many times by the attitude of pretending would-be buyers and that much of the time their demonstration cars are dashing about the country in absolutely fruitless trips.

It has been suggested that the Buffalo trade combine to put into force a uniform charge for demonstration trips, the money to be refunded in case the person who receives the ride buys a car. Some of the dealers are strongly in favor of this plan, while others think it would be impossible to operate such a scheme. It could not be done at all, they say, unless the agreement between the tradesmen were absolutely ironclad and carefully observed.

Even after an interval of several months many of the dealers have vivid recollections of the time and money spent last year in entertaining persons who looked "good." One of the best stories is told by William A. Lutz, manager for J. A. Cramer. Mr. Lutz one morning received a telephone message from a certain motoring physician who said he was thinking of changing his make of car and would be glad to try out one of the Cramer machines. A car was sent to him. He kept the driver busy all morning making professional calls. Nothing more was heard of him until by chance Mr. Lutz learned that at that particular time the doctor's car was in the repair shop. A little quiet inquiry proved that on the afternoon of the day on which Mr. Lutz was "taken in" another firm had sent a driver out with the same physician.

It was a number of weeks later that Mr. Lutz while driving one evening saw the doctor in trouble. His car was broken. The physician did not see Mr. Lutz. Next morning the same physician telephoned the Cramer store saying he was again thinking of buying a new car and would be glad to be taken for another drive. All of the Cramer cars were engaged for that day, the doctor was told.

While the dealers realize that they are often fooled in such cases they all agree, however, that the demonstration trip is a necessary part of the business and they do not seek to do away with it so much as to prevent abuses.

Indeed, even during the coldest of the recent cold weather the cars of local dealers have been busy. On one of the very frostiest mornings of the winter when the thermometer stood at six below a certain Buffalo dealer was requested to take a certain man out for a demonstration. The dealer accepted, although the driver kicked strenuously. The

man who made the request had never ridden in an automobile in cold weather. By the time the car had made the circuit of the park meadow, where the wind blows 60 miles an hour on still days, the passenger was quite ready to quit.

Of course, there are demonstration stories of various sorts. One dealer who was questioned about the abuses said he would do anything to protect himself, but he would not abandon the giving of free rides to persons who wanted to buy. He had recently sold a car, he said, to a man who last year was given a 100-mile trip through one of the hilliest sections of the western part of the state. The trip cost a lot, but it brought an order for a \$4,000 car this spring.

IN NEW QUARTERS

Boston, Mass., Feb. 18—The Bay State Automobile Association is to dedicate its headquarters in The Lenox Wednesday afternoon, when it will hold open house to all motorists. This association has a membership of 150, although it has been in existence somewhat less than 2 months, and at Ormond it gained considerable prominence owing to Bowden and Ross doing such good work, and the fact that other of its members and officers were to be found on the board of officials at that tournament. There is to be no formality at the coming opening, simply a good time. Mr. Ross has consented to place his Dewar and other trophies won at Ormond on exhibition at the club house. President Speare has taken a most active interest in matters effecting legislation during the past month or so, and the club is gaining considerable excellent notoriety.

OLDFIELD'S BILL UNPAID

St. Louis, Mo., Feb. 20—Barney Oldfield's hospital bills, contracted after the accident at the fair grounds race meet, last August, is still unpaid. Judge George B. Sidener, the man who ran the meet, has refused to settle the account, and the Baptist Sanatorium is after Oldfield for \$43.50. One of the rules of the meet was: "Competitors shall be liable for all damages, civil or criminal." But Barney says that the judge agreed to settle the account. Judge Sidener is out of town at present, so is the manager of the hospital. But the bill is as yet unpaid and is charged to Barney Oldfield.

INSTRUMENTS IN BOSTON

Boston, Mass., Feb. 18—A. L. McMurtry, designer and builder of the timing instrument bearing his name, has made arrangements with the Chronograph Club of Boston whereby the latter organization may use his instruments in coming events that it may be called upon to time. The arrangements were made between Mr. McMurtry and President Kerrison during the Ormond tournament. They will be used at all of the big automobile events in this vicinity during the season.

CARS BURNED IN LONDON

London, England, Feb. 22—Special cablegram—Early today more than a hundred automobiles were burned in the metropolitan automobile show on Longacre. Before the firemen had full control of the severe blaze the loss to cars alone amounted to more than \$1,000,000. A great many of the burned machines were exhibited at the Olympia motor show, which closed Monday.

A. A. A. GETS NEW LIFE

New President Starts Ball Rolling Toward Doing Something Useful in Motoring World

New York, N. Y., Feb. 18—As the association has been on anything but a substantial basis since it was first formed, motorists generally were well pleased to learn that some real tangible plans were promulgated at the special meeting of the directors of the American Automobile Association held yesterday. The new president, Elliott C. Lee, of Boston, presided and from the report of the proceedings given out by Secretary Gillette it was evident that the gathering was an interesting one.

It was decided to carry out the plan of incorporation at once. The object of the association as originally declared were brought up and discussed, and as they were found to be vague in some respects and out of date in others, a new platform or declaration of purposes and policy was drawn up, in which the attitude of the organization toward all important issues was plainly set forth. Of this new declaration, the portion of general interest, that dealing with the objects of the body, was in brief as follows:

The objects of the association at the present time are:

First—The meeting in one general body of the automobile clubs of the country and, through them, of the individual automobilists.

Second—The promotion and furthering of all matters of national character in which automobilists are interested.

a—Legislative matters.

b—Good roads.

c—Control of racing.

Third—Providing for its members actual benefits, as follows:

a—Reciprocal club privileges.

b—A bureau to supply information regarding laws, touring, routes, maps, racing statistics, etc.

c—A medium for the exchange of ideas and information of value to clubs in furthering their promotion and usefulness and of value to individual automobilists.

For the benefits of the clubs and individuals in the association, the secretary was instructed to at once prepare a list of all road maps that are being published, with their prices and where they can be obtained.

The Saxe bill, amending the present automobile law in New York state, was discussed and a resolution condemning it was adopted. The officers were instructed to take all fitting measures to oppose it. There is to be a hearing on the Saxe bill at Albany on Feb. 28 and automobilists are expected to be there in force.

President Lee will write to President Roosevelt requesting him to sign the bill permitting automobiles to be carried on ferries, which recently was passed by both houses of congress.

The control of racing was discussed and it was resolved to take better hold of the sport and handle it as it should be done. The resignation of W. C. Temple as chairman of the racing board was left on the table, as Mr. Temple is now touring in Florida. He is to be urged to withdraw his resignation.

The secretary was instructed to call a meeting of the racing board as soon as possible, to arrange details concerning the next Vanderbilt cup race.

In the course of the informal discussion at the meeting, a strong sentiment was disclosed in favor of still further extending the time for receiving entries for the Vanderbilt cup race. The time for closing the entries,

originally named in the deed of gift, was March 15. By consent of the donor of the cup, this was extended to April 15. Even this date is considered too early to get results in the way of entries, and the sentiment is for extending it to June 15, when the racing cars will have been revealed through trials. Mr. Vanderbilt is now in Europe, but it is understood that he is agreeable to the latter date.

BUFFALO SCHOOL OPENED

Buffalo, N. Y., Feb. 20—The opening of the automobile school conducted by the Buffalo Central Y. M. C. A. last Thursday night was made the occasion of a number of addresses on motoring. Dr. P. E. Doolittle, president of the Toronto Automobile Club, was the chief speaker. He advised the young men who are to take the practical work of the course to study the automobile, particularly with reference to commercial use, as that is the coming field for motor cars. He spoke of the great demand for competent men to drive cars and said the business was one in which the young man could start very well, as it was not necessary to wait for others to die off.

George N. Pierce, president of the George N. Pierce Co., also emphasized the need of trained men in the automobile world, both to build and to drive cars. President W. H. Hotchkiss, of the New York State Automobile Association, speaking on legislation as affecting the interests of motorists, said there would be opposition to motoring until the time when cars became so low in price as to be purchasable by the masses.

The school starts off with an excellent registration. The course has been enlarged over that of last year. Lectures will be given by James Hughes Massie, Cornell '01, and the technical courses will be conducted by Charles L. Sheppy of the Pierce company.

The local automobile manufacturers have taken great interest in the school this year and have arranged to give to those who pass a satisfactory examination at the conclusion of the course the opportunity to get practical training at the factories. After that the young men will receive certificates showing that they are competent chauffeurs. This is the first year that such an arrangement has been in force here and the plan has resulted in greatly added interest in the course.

WASHINGTON IS READY

Washington, D. C., Feb. 18—Unless all signs fail the fifth annual automobile show of the Washington Automobile Dealers' Association will be the largest and most successful in the history of the local trade. Every inch of space in the Washington light infantry armory has been disposed of and efforts are now being made to secure a number of adjoining rooms used by officers of the infantry. Manager Washington has a number of applications from accessory manufacturers and he is trying to accommodate them with space. The following cars will be exhibited at the show: Pope-Toledo, Pope-Hartford, Pope-Waverley, Pope-Tribune, Pierce, Packard, Oldsmobile, Winton, White, Locomobile, Baker, Cadillac, Buckmobile, Acme, Ford, Franklin, Columbia gasoline and Columbia electric, Crawford, Wayne, Haynes-Apperson, Twyford and Knox. With one or two exceptions all these cars are represented here. Fisk, Diamond, Hartford and Goodrich tires will also be represented, together with a big array of sundries and accessories.

FATALITY JUST AVERTED

Bad Track at New Orleans Nearly Causes Death of Oldfield's Mechanic, A. Bechhold

New Orleans, La., Feb. 19—There was much excitement at the fair grounds track this afternoon, where an automobile race meet with Barney Oldfield as the star performer had attracted several thousand spectators. The principal event was to be a special match between Oldfield, driving the 60-horsepower Peerless Green Dragon, and Otto Maya, driving a 24-horsepower stripped Peerless. Maya did not care to take chances on driving on the track, which was slippery owing to rain. Barney did not want to disappoint the crowd and asked his mechanic, Albert Bechhold, to take Maya's place. This was agreed to and Bechhold went out for a preliminary spin. Soon after having started the stripped car was going at fast speed. When near the three-quarter post the machine almost stopped, then shot into the air and turned a summersault. After the few moments of uproar there was a rush to the scene of the accident, but before the first of the crowd reached the wrecked machine, the driver was on his feet. But for the fact that Bechhold was thrown from the car to a safe distance, he would probably have been pinned beneath the machine.

Oldfield gave several exhibitions, but broke neither American nor local records. He covered 4 miles in 4:15½, considered fair for a slippery track. In another exhibition he covered 3 miles in 3:30. The mile race for runabouts weighing less than 1,200 pounds was won by a 10-horsepower Pope-Hartford, a St. Louis being second, followed by an Oldsmobile. The time was 2:33. Only two cars started in the 2-mile race for White steamers, and the winner covered the distance in 7:34½. The next event was a 2-mile race for cars carrying three passengers and driver and with a limit of 20 horsepower. There were four starters and it was won by a 16-horsepower Rambler in 4:27, closely followed by a 20-horsepower Oldsmobile and another Rambler as third.

A 40-horsepower Thomas, a 30-horsepower Pope-Toledo and a 24-horsepower Locomobile started for the good roads cup race at 3 miles, which was the best event of the day. The Thomas and the Locomobile took the lead in turn and at almost every other half-mile post there was a change in the leadership. At the end of the second mile the machine from Buffalo gained the lead for rest of the journey, being about 200 yards to the good, but the Locomobile's driver managed it better and after the last mile had been begun the Thomas was gradually overtaken. The Locomobile won by a few yards in 5:58.

BIG PERUVIAN LINE

Washington, D. C., Feb. 20—An automobile line for the purpose of carrying freight between Lima and Callao, Peru, has just been inaugurated. It is incorporated as the Sociedad de Automobiles para Carga Limitada, its manager being Senor Francisco Dammert, and its directors a number of substantial business men of Lima. It is capitalized at \$214,280. At present there are 5 cars in use, each having a freight-carrying capacity of 5 metric tons. They carry cargo direct from the Callao docks to the consignee's warehouse or commercial establishment in Lima, a convenience not offered by the railroad lines.

Although Callao has for centuries been so identified with Lima as to be virtually but a suburb of the larger city, and although this condition has of late years been accentuated by the successive establishment of steam railroads and a trolley line between the two places, facilities for transporting cargo have hardly been adequate to the needs of Lima merchants.

When it is considered that the business district of Callao consists almost exclusively of shipping agencies, branch banks, seaboard consulates, and that, except in ship chandlery, there is hardly a single important commercial establishment of any kind in Callao that is not a branch of some Lima firm, it will be seen that there was urgent need for some cheap and rapid means, such as the new automobile line affords, of transporting import cargoes to their real destination, which is usually Lima. In other words the automobile line fills a long-felt want and its successful operation will help the sale of commercial automobiles throughout South America.

ANTI-SKIDS TESTED

London, England, Feb. 10—The non-skidding trials which were held during the week of the Crystal palace show were really more interesting than that show. Six different devices were tried on the cemented grade leading from the terrace to the basin. After leaving bare 100 foot of starting space for the cars, about 40 square feet of cement was spread with a mixture of soft soap and Thames river mud about 1¼ inches thick. Then followed a dry surface and then the basin.

The skidding appliances had to undergo three trials, in each of which it was possible to score ten points. The first trial consisted in running the four wheels at a rate of speed of 12 miles an hour on the slippery surface and then locking the wheels and turning the car to the gravel surface at the side. In the second trial the car had to be driven at a speed of 15 miles an hour on the mud, then de-clutched and the foot brake applied. In the last trial it was necessary to drive the car to the center of the muddy surface, stop the machine and start anew.

The car fitted with the Samson device scored the maximum number of points in each trial, or thirty points altogether, the only full score among the six competitors. Twenty-six points were scored by the Grose device, which slipped on the second trial when the brakes were applied, and also lost a point in the re-starting trial. The car fitted with the Sawyer non-skidding appliance skidded a good deal when it came to turn in the mud, but lost no points in the brake test. In restarting much time was lost; all told nineteen points were scored. The Watkins came within two points of this score, losing all points in the turning test, scoring ten in the brake and seven in the re-starting test. The rear wheels only, however, were fitted with the anti-skid devices. The Parsons chains did not prevent the car from slipping in any of the three trials and scored only sixteen points, while the Empire made the lowest score, ten points. This device consisted of a armed fork attached to the rear axle of a motor bicycle, each arm carrying a 4-inch rubber tired wheel projecting at an angle about 1½ inches from the ground. In the turning and starting tests the device failed completely.

THE READERS' CLEARING HOUSE

POWER COMPARED

Assumption, Ill.—Editor MOTOR AGE—Will you kindly explain through the Clearing House the difference in horsepower between a 5 by 6-inch single-cylinder motor and a 4 by 4-inch double opposed cylinder motor? Is the latter of proper size to use in a light tonneau car, weighing 1,200 pounds?—V. M. E.

Assuming the two motors to be of similar design a proportion may be made between the piston displacement to get the relative horsepowers. A single-cylinder motor 5 by 6 inches can be rated at 8 horsepower. As the area of a circle is proportional to the square of its diameter it is not necessary to get the actual displacements. Then the 5 by 6-inch single-cylinder motor equation would be

$$5^2 \times 6 = 150$$

and that for the 4 by 4-inch double-cylinder motor would be

$$4^2 \times 4 \times 2 = 128$$

Rating the 5 by 6-inch motor at 8 horsepower the other should then at the same speed develop

$$150 : 128 :: 8 : x = 6.8 \text{ horsepower.}$$

The 4 by 4-inch motor would hardly be powerful enough unless run at a high speed.

GRINDING PISTONS

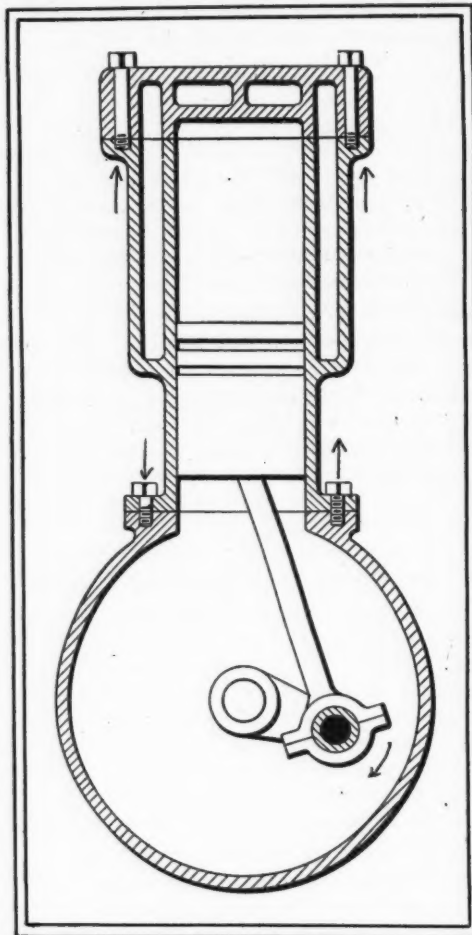
Montrose, Pa.—Editor MOTOR AGE—I am building a gasoline automobile motor and intend to grind both cylinders and pistons accurately. The cylinders will finish exactly $4\frac{1}{4}$ inches, internal diameter, and have 5-16-inch walls. The pistons have walls 5-32-inch thick and heads $\frac{1}{4}$ -inch thick. What allowance should be made in grinding the pistons to insure a proper running fit? Should they not be ground .001 or .002-inch smaller at the upper than at the lower end?—H. W. BEACH.

Grind the cylinders cylindrical to exactly 4.250 inches in diameter. Grind the piston tapering to 4.243 inches in diameter at the power end and 4.246 inches at the open end. Before grinding either the piston or the cylinder, and after they have been bored and turned, place them in an annealing furnace and heat to a straw color. This will remove any strain in the metal.

FOUR-WHEEL DRIVE

Bradenville, Pa.—Editor MOTOR AGE—In a late issue of MOTOR AGE, in reply to a question you stated that the application of power to the front or steering wheels had its disadvantages. Will you please state what they are, for I think that the one great weakness in the present auto is that it does not have power on all four wheels. I am interested in the subject, as I have taken out a patent on the application of power to front wheels. I think the ordinary formula for computing horsepower is erroneous somewhere, when a 15-horsepower steamer only lacks a fraction of a second of equaling a 90-horsepower gas engine in speed. Can you give me an arithmetical rule to find the length of an arch when the width and height are given? An exact rule for such would save a lot of experimental work.—JOSEPH MUNDEN.

There has not yet been commercially developed a practical method of four-wheel drive. The nearest approach is a system of individual electric hub motors. When the car is driven by other power it is possible to construct a four-wheel drive, using one driving motor,

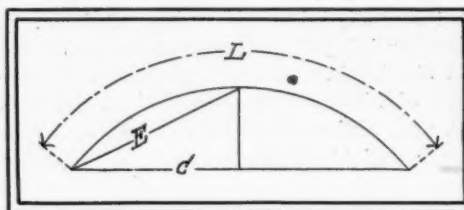


STRENGTH OF CYLINDER HEAD BOLTS

which transmits to a longitudinal split shaft upon which is placed a differential gear, the power being transmitted through the differential. Each of the ends of this shaft must drive other differentials placed respectively upon the front and rear axles. If two units were used one could drive the front and the other the rear axle, doing away with one differential and two shafts. This complex arrangement, together with that of the steering gear, makes a practical design quite difficult to obtain. A steam engine or an electric motor is capable of great overloads for a short time, so that a rated 15-horsepower steam engine could be called upon to develop as high as 30-horsepower for a limited period. The proposition is then only one of weight and surface reduction to the limit, with an excess of boiler capacity. A gasoline motor cannot be forced above its rated power, as there is no reserve boiler supply to draw from. A steam engine of 15 horsepower, at 600 revolutions per minute, with 100 pounds of steam, if made so as to stand the resultant strain, can be forced to 90 horsepower if run at 1,200 revolutions per minute, backed by a boiler pressure of 300 pounds.

The formula for the length of an arc of a circle is as follows, L being the length of the arc, E the short chord, and C the base:

$$L = \frac{8E - C}{3}$$



DETERMINING LENGTH OF AN ARC

CYLINDER HEAD BOLTS

Cedar Rapids, Ia.—Editor MOTOR AGE—I am building a 4 by 5-inch motor with the cylinder head bolted on. How many and what size bolts or studs should be used? How is this determined?—P. L. C.

The strain on the cylinder head is just the same as that holding the cylinder to the crank case, except that in the latter there is also to be considered the tilting action, which is a result of the angularity of the connecting rod, as shown in the sketch. The pull on the head studs is in the same direction and equal on all, while, as illustrated by the arrows placed at the union of the cylinder and crank case, when the motor revolves in the direction of the arrow, the resultant forces give a tilting action on the cylinder. A table follows giving the safe load to be carried by wrought iron bolts of various sizes, with a factor of safety of ten:

Diameter in inches	1-4	5-16	3-8	7-16	1-2	9-16	5-8
Safe Load in pounds	150	250	375	510	690	890	1,110

As the cylinder bore is 4 inches it has an area of 12.56 square inches. Assuming an explosive pressure of 300 pounds to the square inch, the total pressure tending to blow off the head is 12.56 times 300, or 3,768 pounds. This pressure is taken equally on all the studs. The strain on each is 3,768 divided by the number of studs. By referring to the table of safe loads pick out the diameter which is next largest. This calculation is tabulated below:

Number of studs	Load on each	Size
4	$3768 \div 4 = 942$	$\frac{3}{4}$ -inch
5	$3768 \div 5 = 753.7$	9-16-inch
6	$3768 \div 6 = 628$	$\frac{1}{2}$ -inch

OIL FOR COOLING

Sidney, O.—Editor MOTOR AGE—I have heard of coal oil being used in engine cooling and radiating systems. What information can you give on the subject? Do you know for a certainty of its having been used and with what success? It seems to be that it might be dangerous, but some times such things act exactly opposite to what might be expected.—C. B. DEWEESE.

MOTOR AGE does not advise the use of coal oil or any other oil for cooling purposes. The oil is not as efficient as a transfer medium as water and begins to volatilize with a disagreeable odor at rather low temperature. With some oils the vapor would be quite inflammable. With any of the several good non-freezing compounds using water as a base that are now on the market, MOTOR AGE does not see the advantage of using an oil which will volatilize and need replenishing, when the water solutions do not.

MEANING OF CAST STEEL

Springfield, Ill.—Editor MOTOR AGE—What is the difference between cast steel and a steel casting?—M. R. M.

These terms are generally taken to be synonymous. There is a slight distinction, however. Cast steel refers to bars cast by the crucible process and gives a better steel, one that is more reliable as greater care is taken in obtaining pure material and in the proper operation of the closed crucible. A steel casting may be made from open hearth or Bessemer steel.

GOSSIP OF THE

Joins Fisk Force—Fred C. Vanderhoof, formerly with the Standard Spoke & Nipple Co., has been appointed manager of the branch in Buffalo, N. Y., of the Fisk Rubber Co., of Chicopee Falls, Mass.

New Columbia Store—A two-story structure will be erected at 1328 to 1334 Michigan avenue to be used as a salesroom and garage by the Electric Vehicle Co.'s Chicago branch, which is now located at 1413 Michigan avenue.

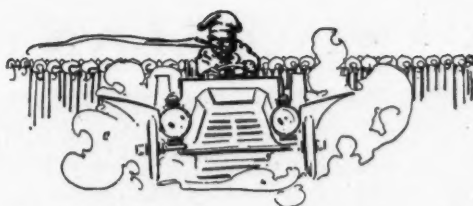
Ready for Spring—The Amos-Pierce Co., of Syracuse, N. Y., has already commenced selling machines and has fitted up the large five-story building formerly occupied by the J. S. Leggett Mfg. Co. into an up-to-date garage. All the appliances have been put in and a large trade is in prospect.

Will Sell and Rent—To sell, rent and repair motor cars is the purpose of the Adams Automobile Co., which was organized recently in Winona, Minn., by James, Adolph and E. M. Adams, who are respectively president, vice-president and secretary of the company, whose headquarters are at 68 East Fourth street.

Out for Himself—W. B. Doddridge, formerly general manager of the Missouri Valley Automobile Co., of Kansas City, Mo., will soon start in business for himself, having leased a lot whereupon a garage will be erected. It is located at Fifteenth and Troost avenue, Kansas City.

Goes to Philadelphia—E. C. Johnson, of the White Sewing Machine Co., of Cleveland, O., who had charge of the White exhibit at the world's fair in St. Louis, Mo., has taken charge of the selling end of the White steamers with the Quaker City Automobile Co., of Philadelphia, Pa., the local agent for the Cleveland made machines. Johnson is not well known in the east, having been generally in the west as a traveling salesman and race promoter. The three race meets which were given in St. Louis, Mo., last year were managed by Johnson.

Arranging for Spring—The W. C. Jaynes Automobile Co., one of the oldest and biggest Buffalo automobile houses, is making extensive changes in its large Main street building. The ground floor, which hitherto has been in one large room with the exception of the offices, is being divided into a sales and display room in which the decorations will be elaborate and a storage and cleaning room. The Jaynes building was the first of



the large new buildings built especially for the automobile trade in Buffalo and the changes now under way will make it one of the most attractive.

New Pittsburg House—The Liberty Automobile Co. has been organized by Dr. T. S. Gamble and W. G. Hasley at Pittsburg, Pa. The company will probably locate in the east end. It will handle the Acme.

Has Big Capital—The Missouri Valley Motor Co., of Kansas City, Mo., is to be incorporated and its capital will be \$50,000. A new salesroom and garage 100 by 160 feet is to be erected shortly for the use of the concern.

Bought by Parent—It is announced that the American de Dietrich Co., of which R. E. Jarrige was president, has been bought out by the parent company of France and hereafter will be known as the American branch. Baron de Turekheim will be the director of the new company and M. de Brou the manager.

Agency Changes at Washington—J. W. Boyd is preparing to open a garage in the rear of 1120 Eighteenth street, N. W., Washington, D. C., under the style of the Columbia Auto Co. He will have the agency for the Franklin car and will maintain an extensive selling, renting and repairing business. Arrangements have been completed whereby the agency for the Locomobile in Washington, D. C., has been placed with the Cook & Stoddard Co., whose garage is located at 1028 Connecticut avenue. They also handle the Winton, Cadillac, Baker electric and White steamer. The Washington, D. C., agency for the Ford has been transferred from A. L. Kull & Co. to Charles E. Miller & Bro. The first mentioned concern will feature the Wayne car this season.

Rambler Wayside Station—Thomas B. Jeffery & Co.'s Chicago branch intends to build a garage and salesroom on the Sheridan road, near the Sheridan station of the Northwestern elevated railroad. The building is to be 60 by 121 feet and cost about \$30,000. It will be divided into show room, office, waiting and storage rooms on the main floor. The

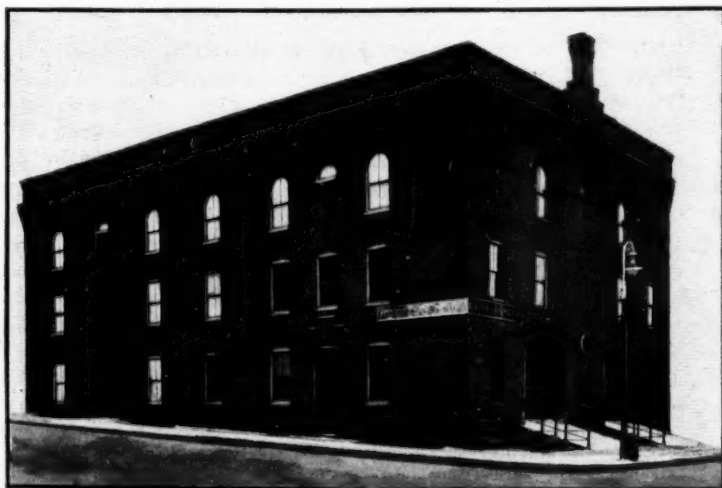
GARAGES

repair shop will be located on the second floor. All told there will be accommodations for 100 cars. The automobile station will be open day and night for the accommodation of Rambler patrons.

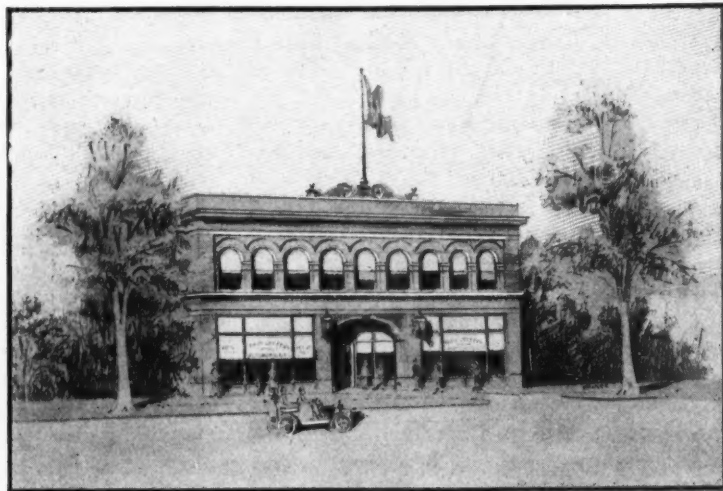
Now in Milwaukee—W. L. Hibbard, formerly with the Buick Motor Co., of Jackson, Mich., and with the automobile department of the Studebaker Automobile Co., in Chicago, Ill., has become associated with the Electric Vehicle and Supply Co., a retail concern of Milwaukee, Wis.

Place at Back Bay—The White Sewing Machine Co., of Cleveland, O., has purchased the Back Bay property located at 320 Newbury street, Boston, Mass., and will remodel it into an automobile garage and salesroom for the exclusive use of the White cars. The building is of brick, with granite facings, three stories high, with basement. The basement and the first floor will be used for storage purposes and waiting rooms while on the second floor are the various offices, reception rooms and salesroom. The third floor will be used for storage purposes and light repairing. Electric passenger and freight elevators will connect the several floors and in the reconstruction of the building all modern appliances and conveniences for motorists and cars will be applied. The building cost nearly \$100,000 and about \$15,000 more will be spent on the fittings.

Auction At Syracuse—The R. M. Cornwall Co., of Syracuse, N. Y., held an auction on Tuesday. Sixty automobiles were offered for sale. Last spring Mr. Cornwall had thirteen machines for sale and good prices were realized. The large number sold this season is caused by the fact that many were brought in by persons who wanted Mr. Cornwall to sell them for them. The remainder were those which were taken in trade or were left over from the new stock. The sale was extensively advertised all over central New York and a large number of automobilists were in town that day. Among the machines sold were eight new electric Stanhopes, five new electric runabouts, three new electric delivery wagons, Oldsmobiles, Franklins, Pope-Toledos, Pope-Tribunes, Northerns, Buckmobiles, Wintons, Locomobiles, Eldredges, Iroquois, Queens, Columbias, Centurys, Elmores, Cadillacs and one gasoline boat. It is announced that all machines sold will be stored free of charge until April 1.



THE NEW WHITE STEAMER GARAGE IN BOSTON



SHERIDAN ROAD GARAGE OF CHICAGO RAMBLER BRANCH

MANUFACTURERS' MISCELLANY



THE WINTON PRIVATE SHOW AT DETROIT

Factory at Stanhope, Mass.—W. C. Perkins of Stanhope, Mass., has asked for a permit to erect an automobile factory in that locality.

Now at Aurora—The Monarch Automobile Co., of Chicago, Ill., has leased the plant formerly occupied by the North Aurora Mill Co., in North Aurora, Ill. The building will be remodeled and machinery installed within a short time. A force of about thirty men will probably be employed.

Changed to Curtiss—The G. H. Curtiss Mfg. Co., of Hammondsport, N. Y., manufacturer of Hercules motor cycles, has decided to name its machines Curtiss hereafter. It makes three different models—2½, 3½ and 5-horsepower machines, all of which they are able to deliver promptly.

Premium for Packards—Notwithstanding the fact that the output of the factory of the Packard Motor Car Co. will be twice as large this year as in 1904, the concern is receiving offers of premiums of from \$350 to \$400 from some of its agents in order to secure delivery of more cars to meet the demands.

Big Dividends—The Neckarsulmer Fahrradwerke, of Neckarsulm, Germany, considered the most important manufacturer of motor cycles in Germany, made a profit of \$100,443 last year, which enabled it to declare a dividend of 14 per cent. The concern also decided to increase its capital from \$100,000 to \$350,000.

Snell in New Line—Samuel Snell, president and general manager of the Indiana Scale & Truck Co., which will put a motor truck on the market during the coming summer, has severed his connection with the concern and has placed his interests with the Patent Exchange Co., of Toledo, O. The Indiana Scale & Truck Co. has its plant at Bluffton, Ind., and offices at Toledo. A. C. Johnson has been elected president of the company to take Mr. Snell's place.

With Franklin Company—Aurin M. Chase, second vice-president and formerly superintendent of the Syracuse Chilled Plow Co., has left that concern and is now assistant superintendent of the H. H. Franklin Mfg. Co. H. K. Chadwick, who has been for 17 years in the employ of Charles Hubbard Sons & Co., is now in the office of the Franklin company.

The company is now employing 1,000 men and installed new machinery last week in its new factory. The suit of the New York Automobile Co. against the Franklin company will be tried the coming week.

Makes Chassis—The Brennan Motor Co., of Syracuse, N. Y., now makes complete chassis and has issued a catalogue showing the plans. Besides its regular motors, air-cooled motors are now manufactured.

Thomas Enlarging—The E. R. Thomas Motor Co. has bought a large plot of ground adjoining the property on which its factory No. 1 stands on Niagara street and as soon as the frost is out of the ground will build an addition to its plant. The new part will accommodate the offices and the section of the factory now used for offices will be filled with machinery. Another addition will be built on

the west side of the building, thus enlarging considerably the capacity of the factory. The Thomas plant is being worked until 10 o'clock every evening nowadays and to date 110 cars are reported to have been delivered to agents.

Diamond Southern Branch—The Diamond Rubber Co., of Akron, O., has established a branch in Atlanta, Ga., which is located on North Pryor street. From this branch the business in the Southern states will be taken care of.

Held Private Show—The Winton Motor Carriage Co. of Cleveland, O., did not exhibit at the show at Detroit, because the concern could not secure adequate room for the display of its various models. An improvised show was arranged at the garage of the Detroit agent of the Cleveland concern, the Detroit Automobile Co., at 248 Jefferson avenue. According to the company, the results of the sales at this show were better than what they could have been under other circumstances.

Six-Cylinder Thomas—Plans are being made at the factory of the E. R. Thomas Motor Co. for a six-cylinder racing car of approximately 110 horsepower. E. R. Thomas, president of the company, has not approved the scheme as yet, for he is not keen for the racing game, but the plans for the car have been drawn and the other officers think they can induce Mr. Thomas to approve it. The engine will be after the regular Thomas flyer model but will be lighter than the six-cylinder engine in the car seen at the Florida meet. Barring some few minor features to suit the requirements of a car intended for high speed, the machine will be built on the same lines as the regular Thomas flyer. Harry Houpt, New York sales agent for the company, is pressing the company to build the car. His idea is to have Fred Titus drive it.

AFFAIRS OF THE CLUBS

More New Rules—The sporting committee of the Automobile Club of Belgium has decided that no cups will be accepted hereafter until the rules governing the intended contest or race shall have been adopted. Furthermore the expenses connected with the arranging of the event may be charged to the account of the donator of the cup.

Warning Signs Up—Through the efforts of officials of the Automobile Club of Philadelphia, warning signs have been erected at the boundaries of the town of Hammarton, on the much-traveled route from the Quaker City to the City-by-the-Sea. These beacons will indicate to the automobile traveler just when he enters and leaves the town's limits, thereby obviating the danger of being mulcted for fracturing the local speed ordinances.

Club Will Be Active—As spring approaches the Automobile Club of Syracuse, begins to shake itself and to exhibit evidence of real life. Since the annual banquet there has been "nothing doing" in the club line and many people have wondered if interest was dying out. During the past week, however, the officers have been getting together and planning for a rousing time this summer and it is probable that the club will be much more alive than any year in its history. The matter of tours will be taken up by the club and

more will be done in this line than in any since the club was formed. The opening up of South Bay as a big central New York pleasure resort will furnish a beautiful trip for the club. Many other runs about Syracuse will be taken advantage of and it is hoped that the club members will become better acquainted and work for the good of the sport. The first of a series of entertainments by the club before the weather will admit of runs will be given at the Yates hotel and will be a novel affair.

Planning for Summer—The St. Paul Automobile Club, of St. Paul, Minn., met at the Commercial Club last Friday night and forty-five enthusiasts of the city talked over automobile conditions, and discussed plans for the summer. The club elected the following officers: President, L. A. Wood; vice-president, George C. Knocke; secretary, B. A. Ledy; treasurer, J. S. Bryant; trustees, T. W. Short, R. C. Wright and R. M. Neeley. Another meeting of the St. Paul is to be held March 3, and a turnout of nearly all the motorists of the city is then expected. Up to the present time St. Paul has been unable to do anything in a united manner for the aid of the sport feature of the game, but indications are that the owners in the capital city have at last "found" themselves.

Race for Decoration Day—At the meeting of the board of directors of the Chicago Automobile Club, held last Tuesday noon, there was an informal discussion concerning the arranging of a 3-day race meet to be held Decoration day.

Week of Sport—A fortnight of automobile and motor boat competitions, races, parades, flower battles and endurance runs is being arranged by the Automobile Club of the Rhone, of France, to be held from June 12 to 25. L'Auto is preparing the program of the various events, for which \$9,000 in prizes have been subscribed.

House Deal Closed—After several weeks of negotiation the Automobile Club of Buffalo last Friday signed the lease for new quarters in the Teck theater building on Main street. Work was started at once on the alterations which the club will make in the rooms. It is expected that the changes will have been completed by March 6, when the Buffalo show opens, and that tradesmen visiting Buffalo at that time will find the rooms very convenient. It is proposed to hold in the new rooms the banquet which will be given to out of town visitors on Thursday night of the show week.

Farson Out—The board of directors of the Chicago Automobile Club met Tuesday, February 21, and accepted the resignation of President John Farson, which had been tendered several months ago. Ira M. Cobe was elected to succeed him, while W. J. Lloyd was elected first vice-president. The second vice-presidency was not filled. The new president is one of the most popular members of the club and has practically been its president since the first of January, John Farson being out of the city. Much credit is due Cobe in promoting the new clubhouse plans, for which nearly \$50,000 have already been subscribed out of the \$100,000 wanted.

Wants Better Quarters—A committee of the Automobile Club of Philadelphia is looking over the ground with the idea of securing new quarters for the club. At present its affairs are carried on from a single room in a large office building at Broad and Chestnut streets. The intention is that the committee shall select some place in the central section of the city where the members may store their machines, and if possible, fit up several rooms to serve as a club house. It is hoped that in the not distant future some scheme may be evolved whereby a house especially fitted for the needs of the club will be built. The committee is ordered to report at the annual meeting of the club, which takes place on March 13.

Found Tough Going—About sixty members of the Automobile Club of Southern California, with headquarters in Los Angeles, made a trip to Riverside, some time ago. More than 100 motorists had planned to go on the trip, but the weather was bad and many preferred to stay at home. The tourists reported that the trip itself was unpleasant. Some of them were stalled several hours in deep mud and had much trouble in getting to their destination. The original plans of entertainments could not be followed owing to the late arrival of many of the motorists. At the Glenwood hotel Mayor McFarland and the authorities of Riverside met the Los Angeles party in the evening and a banquet was given, followed by a ball.

IN A LEGAL WAY



LOSES ON TECHNICALITY

Monday the Appellate court rendered a decision in favor of the city of Chicago by which is dissolved the injunction granted by Judge Hanecy last August to John Farson, president of the Chicago Automobile Club, and a number of other members restraining the city from enforcing the city automobile ordinance as to numbering, licensing, registering and lighting of motor cars. The city, which appealed, claimed the injunction granted by Judge Hanecy should be considered void because the city had not been notified. John Farson is reported to have declared he would instruct his attorneys to file a new bill and thus overcome the technicality which caused the court's decision. If necessary the case will be taken to the highest court in order to have the case settled on its merits.

DANGEROUS BILL

New York automobilists are seriously discussing the new bill which Senator Grady has introduced at Albany, which makes the owner of a vehicle that kills a pedestrian liable to prosecution for manslaughter. Senator Grady argues that the operation of a motor or any other kind of vehicle at a speed prejudicial to the welfare of pedestrians, whether local ordinances permits certain limits of speed or not, is a serious offense.

Motorists must regulate their speed so as not to endanger other persons who are traveling or crossing the same highway. The mere violation of the speed law under the new bill may be punished by 30 days' imprisonment and \$100 fine. Where anybody is injured, a fine of not less than \$1,000 and not more than \$2,000 may be imposed, with imprisonment of not less than a year, nor more than 2 years.

BAY STATE LAW CHANGES

As is customary during the legislative season in Massachusetts the automobilists have come in for a great deal of harsh and, to say the least, undeserved criticism, and the wise men of the state have been called upon to protect the innocent farmer and pedestrian and to place the motorist behind bars on the slightest of provocation. Several proposed bills have been placed before the members of the state legislature, but so far as can be learned the motorists have nothing to fear, and they will be permitted to do this year as they did last. On Tuesday last the committee on roads and bridges gave a hearing on two important measures. One is entitled an act relative to the registration of automobiles and motor cycles and to the licensing of operators, and provides in brief that the highway commission shall be made a semi-judicial body, that all but Massachusetts numbers shall be prohibited on machines operating in this state, that the commission shall have power to revoke a manufacturer's or dealer's certificate of registration, and that novices shall be permitted to learn to operate without breaking the law.

The other bill is based on the recommendation of the commission in its last annual report, that it be given the right to further

regulate the speed of motor vehicles on certain highways upon petition of interested persons, increasing the rate on some highways and decreasing it on others. This measure is generally favored by the automobile interests, because they believe that in many places the rate of speed now permitted is too high for safety, while in certain towns it is unreasonably low.

The opposition to the bill comes from the towns which do not believe the right to regulate the speed of vehicles on their highways should be taken away from them; when it is considered that they are responsible for repairs and for accidents happening thereon.

The towns contend that the proposed action was without precedent in the state; that they should not lose the right to make their own speed laws. In this they are somewhat wrong, for in the day of the bicycle there was a state law passed, and is now in force, governing the speed of bicycles on all roads, other than those under the jurisdiction of the several park commissioners.

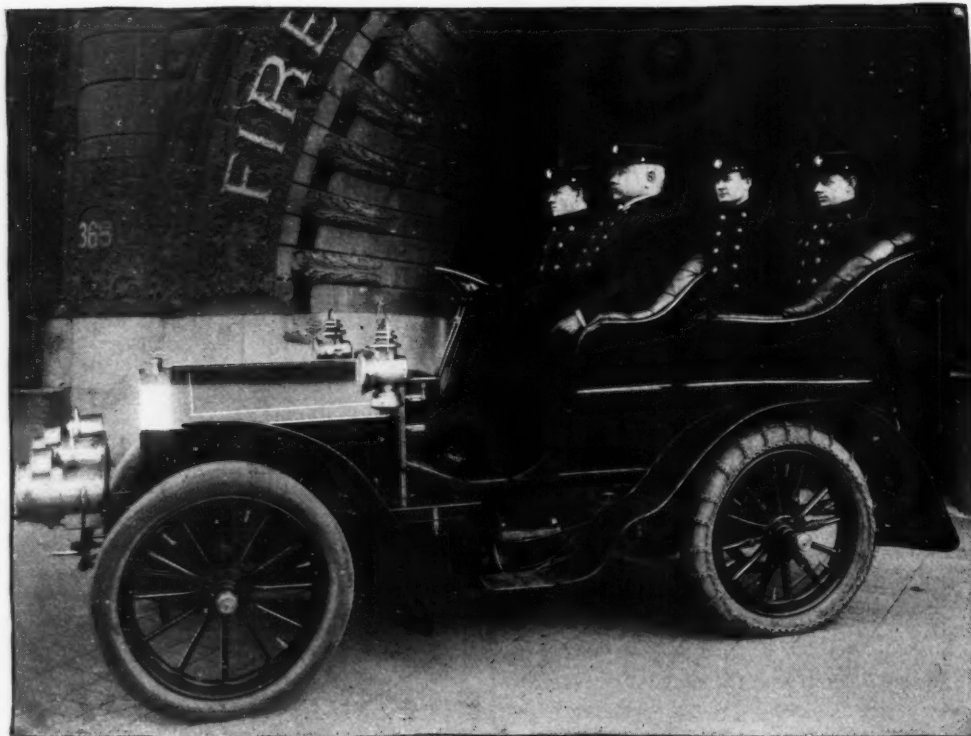
WILL HAVE FINE ROAD

The efforts of the automobile owners to bring about the construction of a first class highway over the 11 miles of road between Minneapolis and St. Paul, Minn., is bearing fruit. A bill has been introduced in the Minneapolis legislature, and seems to be reasonably sure of passage, to allow the issuing of \$100,000 in bonds by the city of St. Paul to macadamize University avenue from Dale street to the city limits. The city limits of St. Paul extend to within 3 miles of the heart of Minneapolis, and the macadamizing of the avenue for the distance mentioned will leave only about 1 mile of open space to the beginning of the asphalt pavement in Minneapolis. The latter city has already made plans for the extension of the pavement to the city limits. There has been great need of a direct highway, well paved, between the two cities.

ILLINOIS PROPOSES NEW LAW

While some automobilists believe that the automobile bill presented the legislature at Springfield by Representative Frank J. Heinel, of Jacksonville, should be fought in every respect, others think it is wiser to try and arrive at some understanding with the legislator which would possibly lead to either a revised bill or a new one which would satisfy all. The Chicago Automobile Club favors the conciliatory method and Attorney Gorham, its secretary, has prepared a bill which he thinks will be found satisfactory to all concerned. There will be a meeting of the club Thursday, February 23, at which this bill will be discussed and a few days later Attorney Gorham and Ira M. Cobe will go to Springfield and submit the new bill. Representative Heinel suggests in his bill that the maximum speed at which motor cars should be allowed to travel should be 15 miles an hour in the country, 10 miles in cities and villages and 6 miles in thickly populated sections. Chauffeurs should be compelled to pay a fee of \$2, for which they are to receive a number which is to be attached to hats or caps; the owners of cars must pay \$2 for each license, which is to be secured from the secretary of state, while manufacturers and dealers or agents are to pay a license fee of 50 cents and register with the secretary of the state a description of each car in factory or store. All cars must carry three lights, on which the word "Illinois" is to be displayed.

FROM THE FOUR WINDS



THE ST. LOUIS FIRE CHIEF PROUD OF HIS NEW AUTOMOBILE

Denver's Show—The automobile show of Denver, Colo., will open April 10 and last 4 days.

Has Pope-Toledo Boat—The commodore of the Philadelphia Yacht Club, William H. Bromley, has just received a new Pope-Toledo motor boat, which he will use in cruising on the raging Delaware during the coming summer.

After Tax Dodgers—About 600 owners of motor cars in Cleveland, O., are said to have avoided paying taxes on their machines last year. The board of review is now trying to find a way to compel these owners to pay their dues to the city.

Hunch for Potter—According to a cablegram from Berlin, Germany, a bill has been presented in the Reichstag providing for the compulsory formation of an organization of automobilists which will be responsible for all damages. Every owner is to be compelled to join the organization.

Seeking Rooms Already—Within the last few weeks at least a dozen advertisements have appeared in automobile papers of Paris from owners of rooms, flats and cottages located either in Clermont-Ferrand or in other localities along the Auvergne course. It is reported that some of the most desirable suites in the leading hotels have already been engaged by prominent automobilists.

Show in India—After the recent endurance run from Delhi to Bombay, in India, an automobile show was held in the latter city. Only the cars which took part in the tour were placed on exhibition. In the class for cars costing \$4,000 or more the Fiat and de Dietrich were awarded gold medals; the Lanchester and Thornycroft silver medals. In the class for cars costing from \$2,000 to \$4,000 the Darracq and Orleans were awarded gold medals, while the Argyll, Humber and Clement-Bayard were given silver medals. The Wolseley and Minerva were awarded gold medals in the class for cars

costing less than \$2,000, while the Humber was given a silver medal.

Quite the Thing—At the business men's exhibition, held in the armory at New Haven, Conn., many automobiles were shown. Among them were the White, Ford, Orient, Rambler, Marion and the Indian and Campbell motor cycles.

Another Modern Fire Chief—Following the example of the chiefs of fire departments in several large American and European cities, Chief Swingley, of the fire department of St. Louis, Mo., now uses a motor, a Locomobile, in the regular fire service.

Climbed Steps—Manager Kelsey of the Philadelphia Maxwell agency, created quite a furore on Broad street in that city last week by running a 16-horsepower car to the top of the high steps leading to the entrance of the Mercantile Club and backing down again without accident. The feat was the outcome of a wager.

Royalty Interested—At the recent automobile show of Brussels, Belgium, King Leopold and other members of the royal family were visitors almost every day. While the king of Italy could not visit the automobile show of Turin the queen went there several times. In the awards for the best decorated stands, gold medals were given to the Oldsmobile, Fiat, Clement-Bayard, de Dietrich, Itala and Rapid.

Good Steam Test—Leon Serpollet gave another demonstration of the qualities of his steam omnibuses when he took a dozen newspaper men in one and ascended Saules street, which has a gradient of 25 per cent at the start, 22 per cent about the middle, and then goes on increasing up to 40 per cent. The bus, which is fitted with a 20-horsepower motor, weighs 8,536 pounds and has 4½-inch tires on the front wheels and 5-inch tires on the rear wheels. While about 15 yards from the top of the hilly street, the vehicle was suddenly stopped. Serpollet then

gave the party some information concerning the machine and started up the grade again without difficulty.

Made Local Record—A party of motorists recently drove from San Francisco, Cal., to San Bernardino in a two-cylinder Wayne car and covered the 71 miles in 2 hours 30 minutes, which established a new local record.

Hope for Roads—Samuel Houston, of Steubenville, O., the first state highway commissioner, opened his office at Columbus last week. Automobile enthusiasts expect through Houston's department to secure better roads throughout the state.

Peugeots Won—A motor cycle race was recently held near Turin, Italy, in which French, German, Italian, Belgian and Swiss machines took part. Two Peugeot motor cycles won first and second place, the winner covering the 36-mile course in 59 minutes.

How Strange—Baron de Caters, who recently visited the Daimler works in Germany in order to test the motor of the 90-horsepower Mercedes which he is to drive in the Bennett race, said it developed 125 horsepower. "Well, all I can say," remarked the baron, "is that he who passes me in the race will have to go a whole lot faster than I."

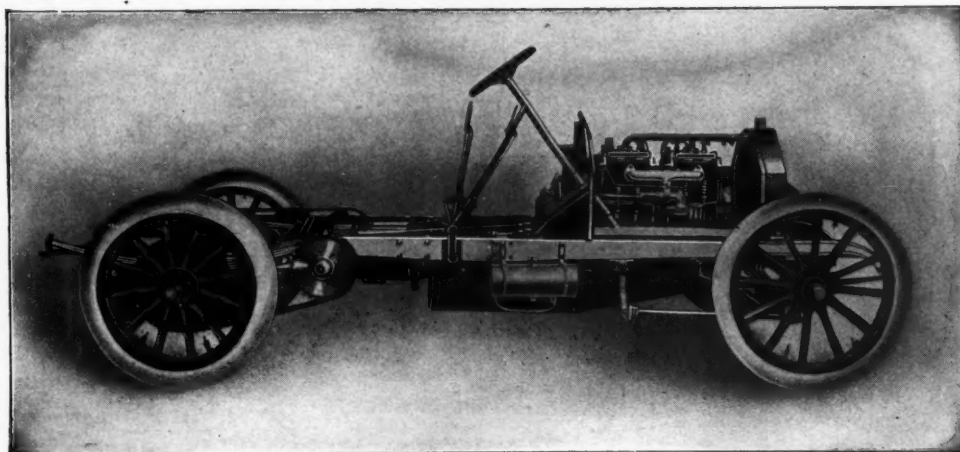
Iowans Bought—According to newspapers from Des Moines, Ia., more than a hundred citizens of that town attended the recent automobile show in Chicago, Ill., and at least a dozen purchased cars, while many placed orders with local dealers who were in the party. At present there are 100 motor cars in the Iowa town, but it is thought that before the end of the year the number will have grown to 150.

Prize for Mits—Prince d'Arenberg, of the Automobile Club of France, has placed \$100 at the disposition of the French club to be awarded as a prize to the inventor or builder of the most suitable device which will permit an automobile driver to keep his hands protected from the cold. The device must not be such that the driver will be enclosed and thus be unable either to hear or be heard from the outside.

Heats by Exhaust—Fred Titus, of Toledo, O., is working on a heating apparatus for automobiles. Titus makes use of the exhaust from the gasoline engine, running pipes, which are protected by a covering of asbestos, through the sides of the limousine body, finally exhausting at the rear of the car. An attachment inside the limousine enables the driver to cut out the hot exhaust in the pipes, if desired, before it enters the main body of the car.

Lecture by Croninger—R. Harry Croninger, sales manager of the Dayton Motor Car Co., of Dayton, O., gave a lecture on the Construction and Care of an Automobile at the Young Men's Christian Association of the Ohio town a few days ago. Nearly seventy-five persons interested in automobile matters attended the lecture at the close of which the plan of the Dayton Automobile School was presented. The school will give a course of eight lectures or practical talks by experts, accompanied by demonstrations wherever possible. The talks will be given once a week either in the lecture hall of the Y. M. C. A. or in some suitable garage or repair shop.

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1905 Model Fiat Chassis
NOW ON EXHIBITION AT OUR GARAGE

"The Aristocrat of Auto Cars"

NEW CATALOGUE FREE

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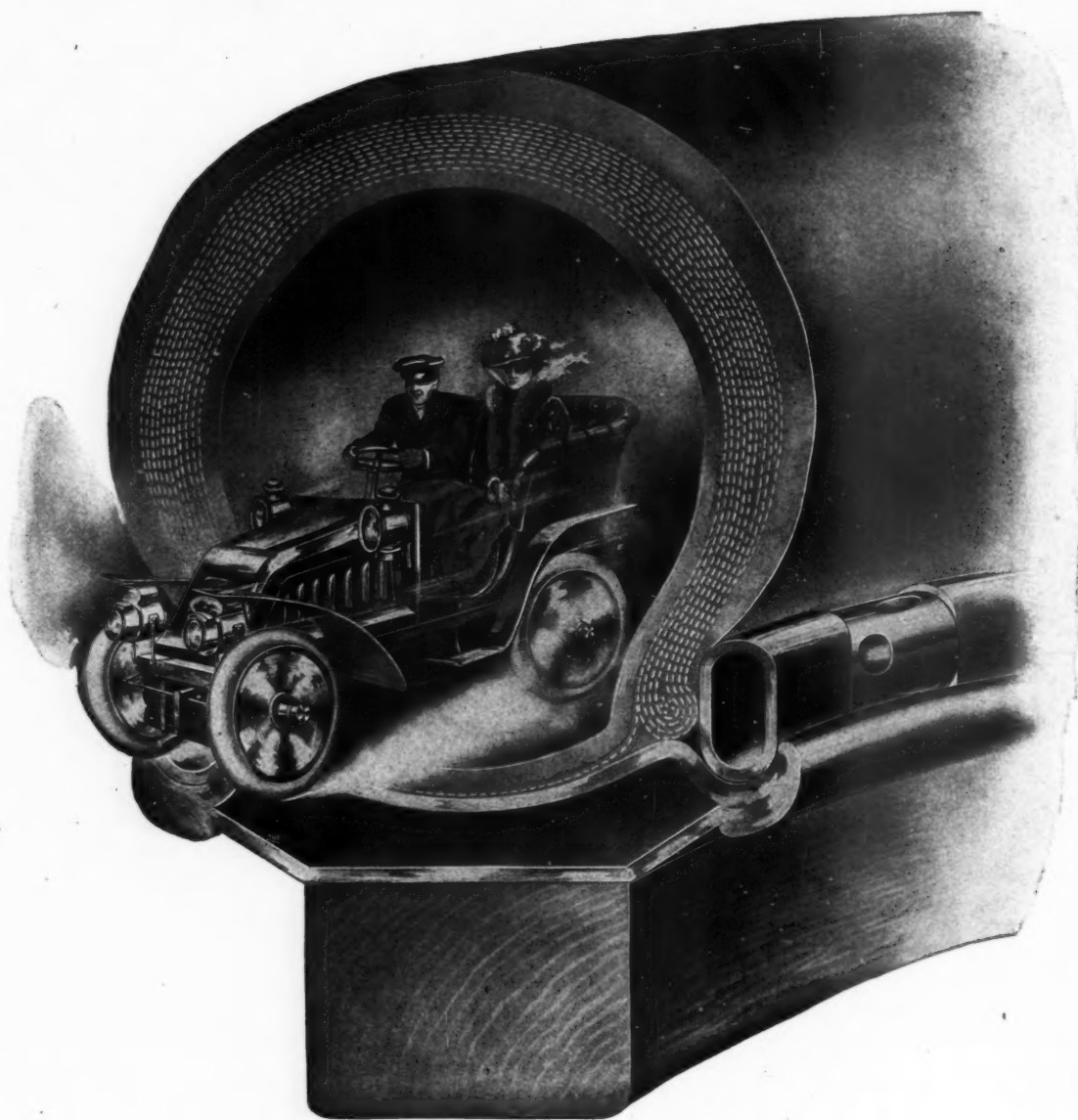
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WHY THE Perfected Dunlop Detachable Tire IS THE MOST DURABLE

It's the only Automobile Tire that can be and is completely steam cured



The DUNLOP began where mechanically fastened tires have left off.....The only Automobile Tire that does not require lugs or other mechanical fastening.

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SURREY, TYPE ONE

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18 H. P. Immediate Delivery

ACTUAL use has demonstrated that this vehicle is exactly suited to the needs of persons of moderate means, for a beautiful, roomy, powerful and reliable family touring car.

Its operation is both simple and natural. The ignition of the spark is entirely automatic. The brakes are operated by pedals, not by levers. With the steering wheel and throttle attached to it, operable by one hand, the other hand is always free to operate the clutches by the single lever, and, as many women and children have found, no confusion is possible.

The working parts are easily inspected by removing the hinged floor and seat falls, and it is never necessary to crawl under the machine nor keep a mechanic to look after repairs.

Six Other models, \$750, \$850, \$1250, \$2000, \$3000.

Send for the current issue of *The Rambler Magazine* (free) and learn with what remarkable facilities **Ramblers** are made, and better understand why we can undersell other makers of fine cars.

THOS. B. JEFFERY & CO., Main Office and Factory, Kenosha, Wisconsin

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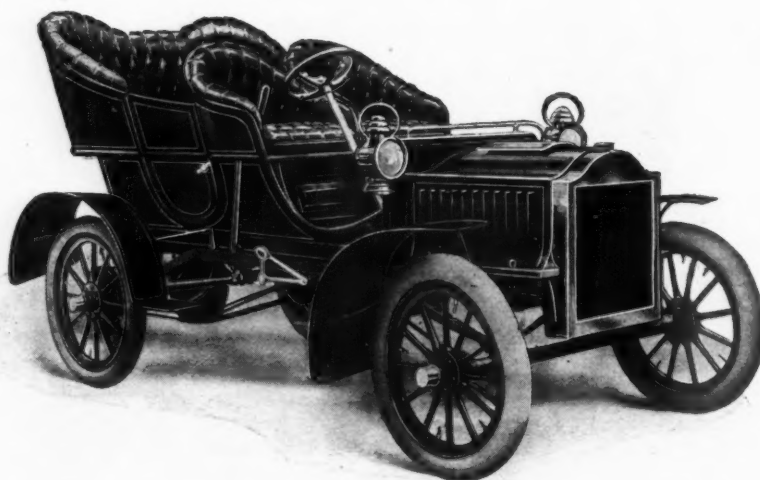
BOSTON, 145 Columbus Avenue

NEW YORK AGENCY, 134 West 38th Street

CHICAGO, 302-304 Wabash Avenue

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The Leader of Light Touring Cars
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The embodiment of style, quality and up-to-date features. These cars are built on lines of strength which guarantee endurance and satisfactory service. You get "scripture measure" when you buy an Oldsmobile.

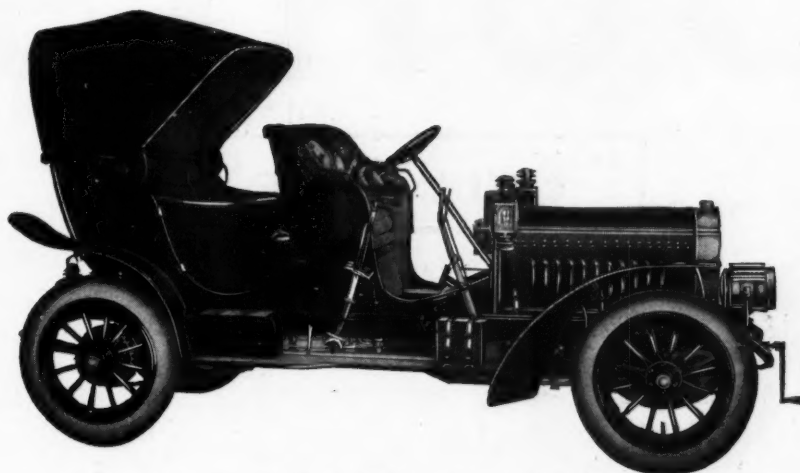
7 h. p. Standard Runabout	\$650
7 h. p. Touring Runabout	750
10 h. p. Light Tonneau	950
20 h. p. Touring Car	1,400
10 h. p. Delivery Car	1,000
16 h. p. Delivery Car	2,000

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Member of the Association of Licensed Automobile Manufacturers

Columbia Gasolene Cars



MARK XLV, 4-CYLINDER, 35-40 H. P. ROYAL VICTORIA—\$5,000.

A SURPLUS of material for every strain and no excess of material where not needed. Parts that oftenest break in cars of ordinary construction are made unbreakable under any stress of normal use. New carbureter, new system of spark and throttle control, new steering, new method of releasing compression and other improvements adding to efficiency of motor and ease of control and caretaking.

With Standard Double Side Entrance Body, \$4,000. With Royal Victoria, Double Victoria, Landaulets and Limousine Bodies, \$5,000 to \$5,500.

Catalogue of Columbia 35-40 and 18 h. p. Gasolene cars will be sent on request. Also special separate catalogues of Columbia Electric Carriages and Columbia Electric Commercial Vehicles.

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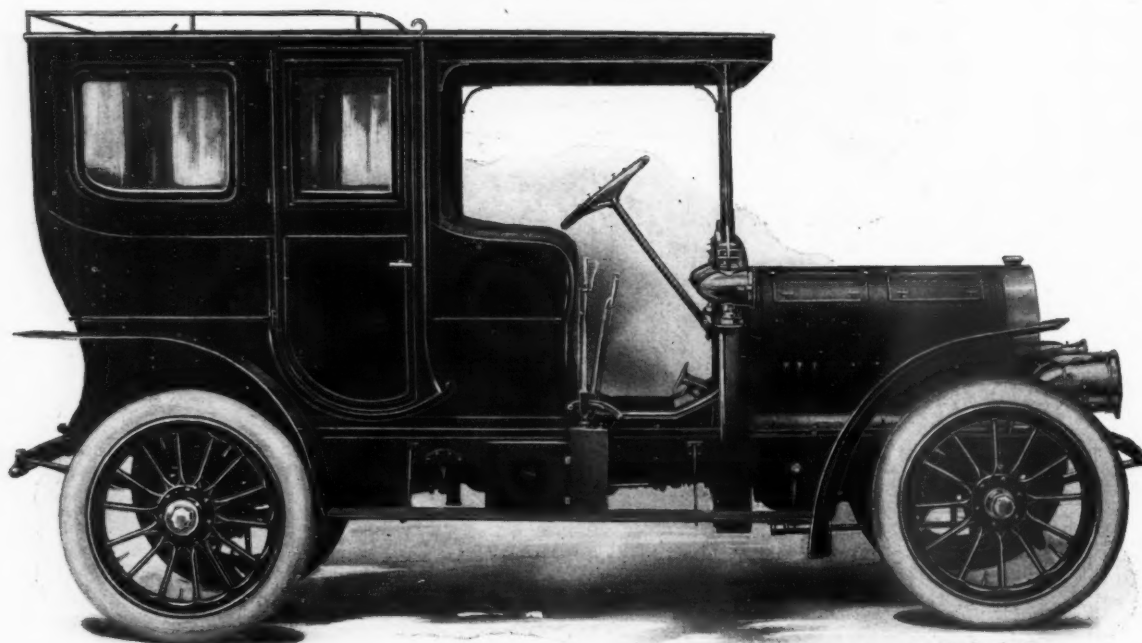
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NEW YORK—134-136-138 West 39th St. BOSTON—74 Stanhope St. CHICAGO—1413 Michigan Ave.

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"True Blue"



32-38 H. P.

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\$4,000

Direct Flexible Shaft Drive—Free Driving Axle—Perfect Throttle Control
—Without Mechanical Governor—Positive Automatic Lubrication of Entire
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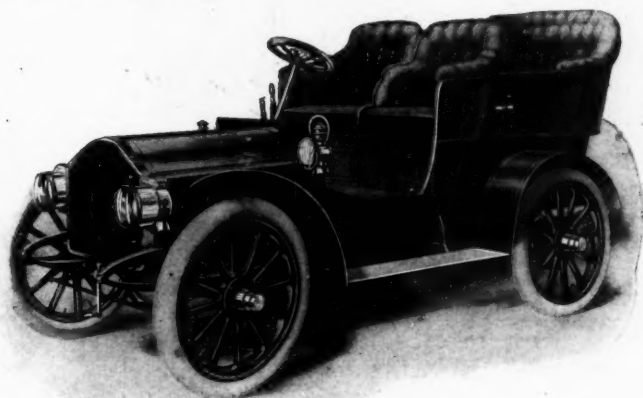
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in the Orient line—a car for the man of moderate means, a car for the novice, a car for the business or professional man, a car for the lover of speed and style, a car for those who will have the best at any price.

One of the most popular cars in America is the Orient Buckboard—better than ever this year, and fifty dollars lower in price; only \$375. It is a thoroughly practical, dependable car, simple as a bicycle and capable of express train speed. Will make 35 miles an hour, and take the hills with ease. New and simplified carbureter this season; improved muffler; larger spring surface; almost noiseless driving pinions; and a new starting device that is a wonder for easy working.



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LIGHT TOURING CAR, WITH TONNEAU, MODEL F,
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Another Leader

Our Model F—a light Touring Car of 16 h. p., with Tonneau—the most car for the money in America.

This is the only car of 16 h. p., or less, having a four-cylinder, vertical fore-and-aft motor. Positive Air-Cooled; sliding gear transmission; direct drive; three forward speeds (with reverse); and a full Mercedes type hood. Catalogue free.

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Buckboard, Model A,	- - - -	4-H. P., \$375
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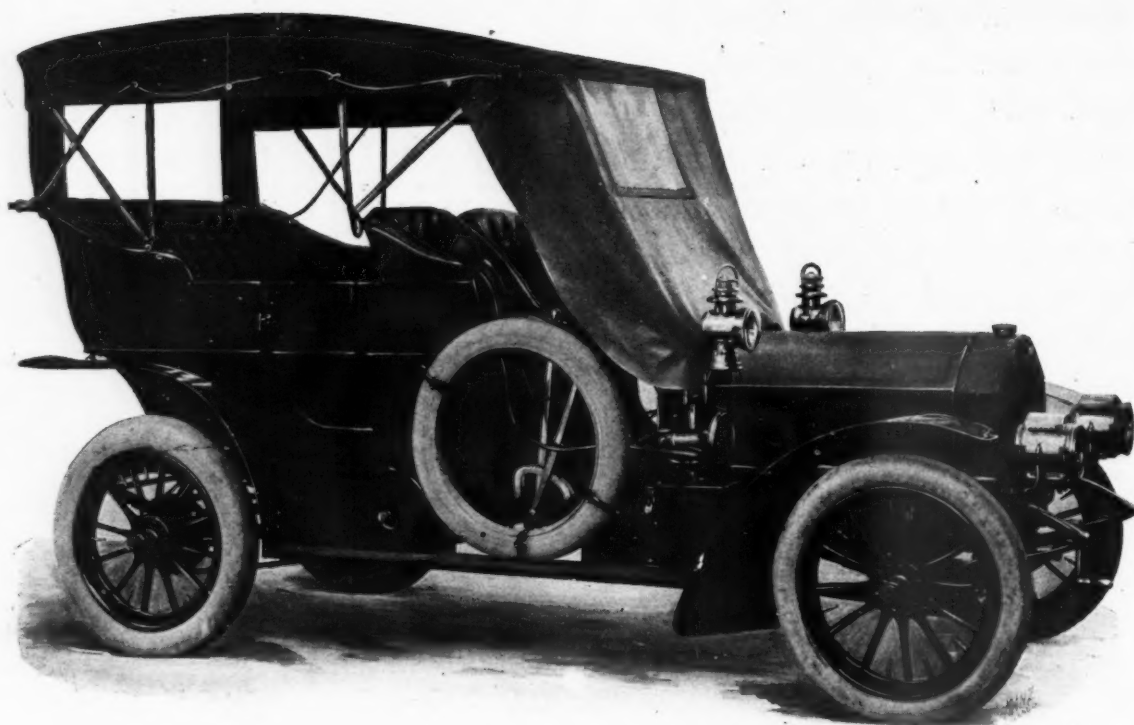
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Forty Horse Power

Seven Passengers



The Fastest, Strongest and Lightest Built Touring Car in the
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This Car has better material and workmanship and is better adapted to American roads than any French Car made. Our record of maintenance on these cars is lower than on any other high powered Car.

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¶ No lugs are used. The flap in the tire makes them unnecessary.

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The Tire is attached to a flat rim having a removable side flange.

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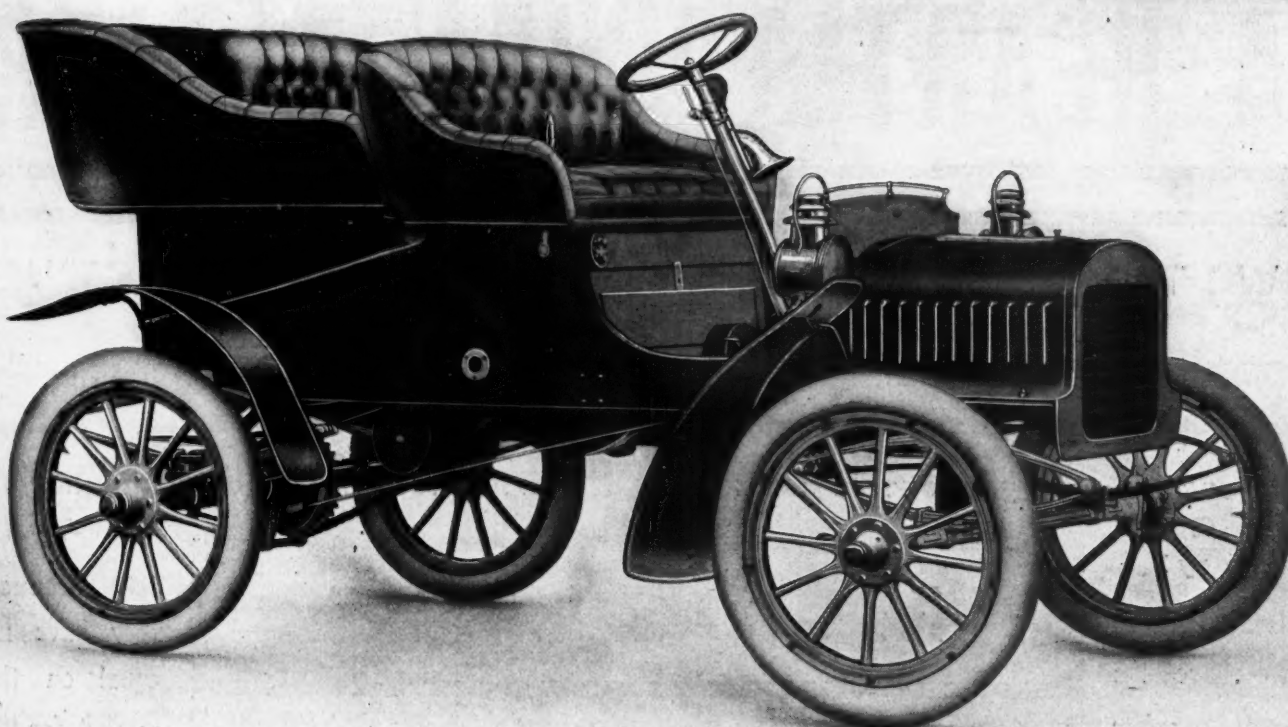
Creeping and Rim-Cutting entirely avoided.

The Tire has more air space to sectional diameter than any other tire of same sectional diameter, permitting the use of a smaller tire---hence a saving to the purchaser.

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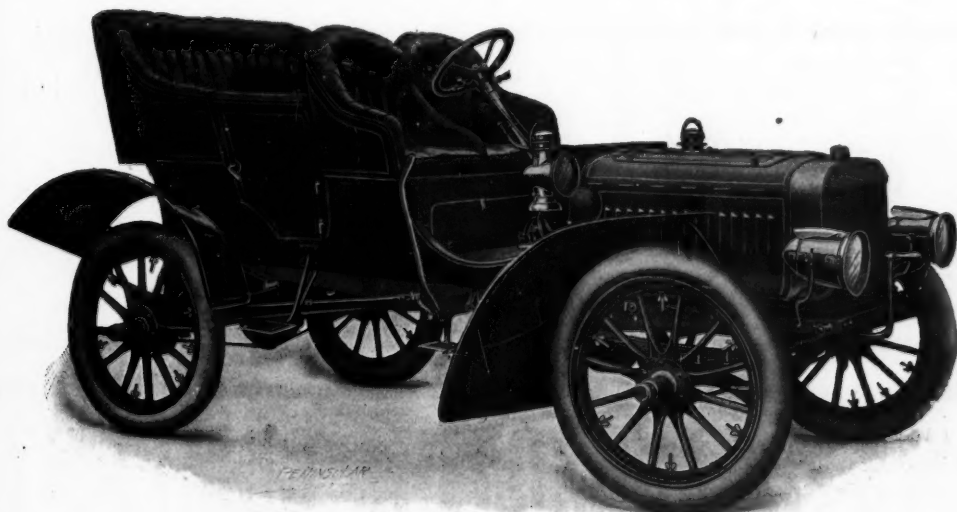


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Don't experiment Just buy a FORD

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Model "C" Tonneau Car, 1,250 lbs., 2 cylinder opposed, price	\$950
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WHO IS WILLING TO BE CONVINCED

Reasons why you should secure the Queen agency:

1st. Because we have the most complete line of cars ever offered by any manufacturer—seven (7) different models.

2d. Excellent workmanship throughout, high finish, swell upholstery, powerful motor and popular price

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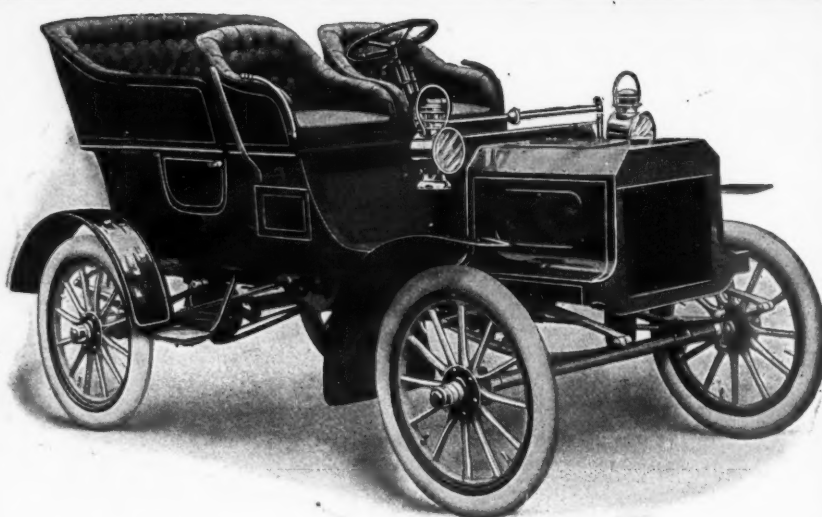
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3d. All parts interchangeable insuring you against vexatious delays.

4th. We are granting agencies only to thoroughly responsible parties who will be courteous and attentive to customers.

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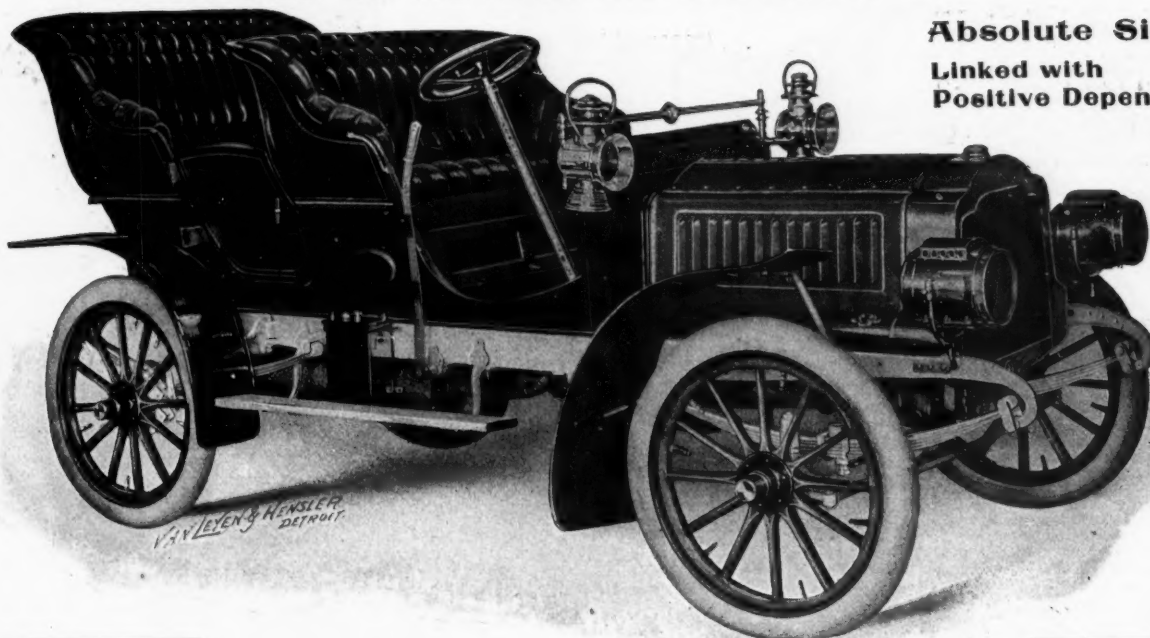
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C. H. BLOMSTROM MOTOR COMPANY
DETROIT, MICHIGAN

WE PROMISED AND MADE GOOD

To Create a
Sensation at the
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Just as we Have at the Cleveland Show.



**Absolute Simplicity
Linked with
Positive Dependability**

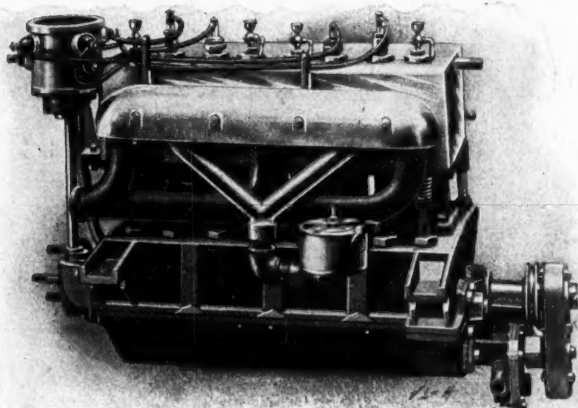
THE

The New Hammer Touring Car, 24 H. P., 4 Cylinders. Price, \$2,500

1905

HAMMER

Here's One of the Reasons Why



THE MOTOR

The motor consists of four vertical cylinders cast in one piece without water jacket.

This permits of the most critical examination of the casting.

The water jacket is one aluminum casting.

It encloses all four cylinders and results in by far the neatest, cleanest and most attractive appearing engine yet shown.—Patent applied for.

This is one feature of the Hammer Motor.

The valves are interchangeable.

Each valve has an individual case which fits perfectly into separate chambers.

In point of compact construction, absolute simplicity and strikingly plain appearance, no motor was ever built LIKE THE HAMMER.

Our Air-cooled RUNABOUT

will be a sensation of the season, both in construction and low price. It will be just what you want. Wait before you buy and see

THE HAMMER

We want every dealer in the United States to familiarize himself with our methods—write.

THE HAMMER MOTOR COMPANY
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Also Manufacturers of Auto Boat Engines

**Commercial
Vehicles**

of every
Description

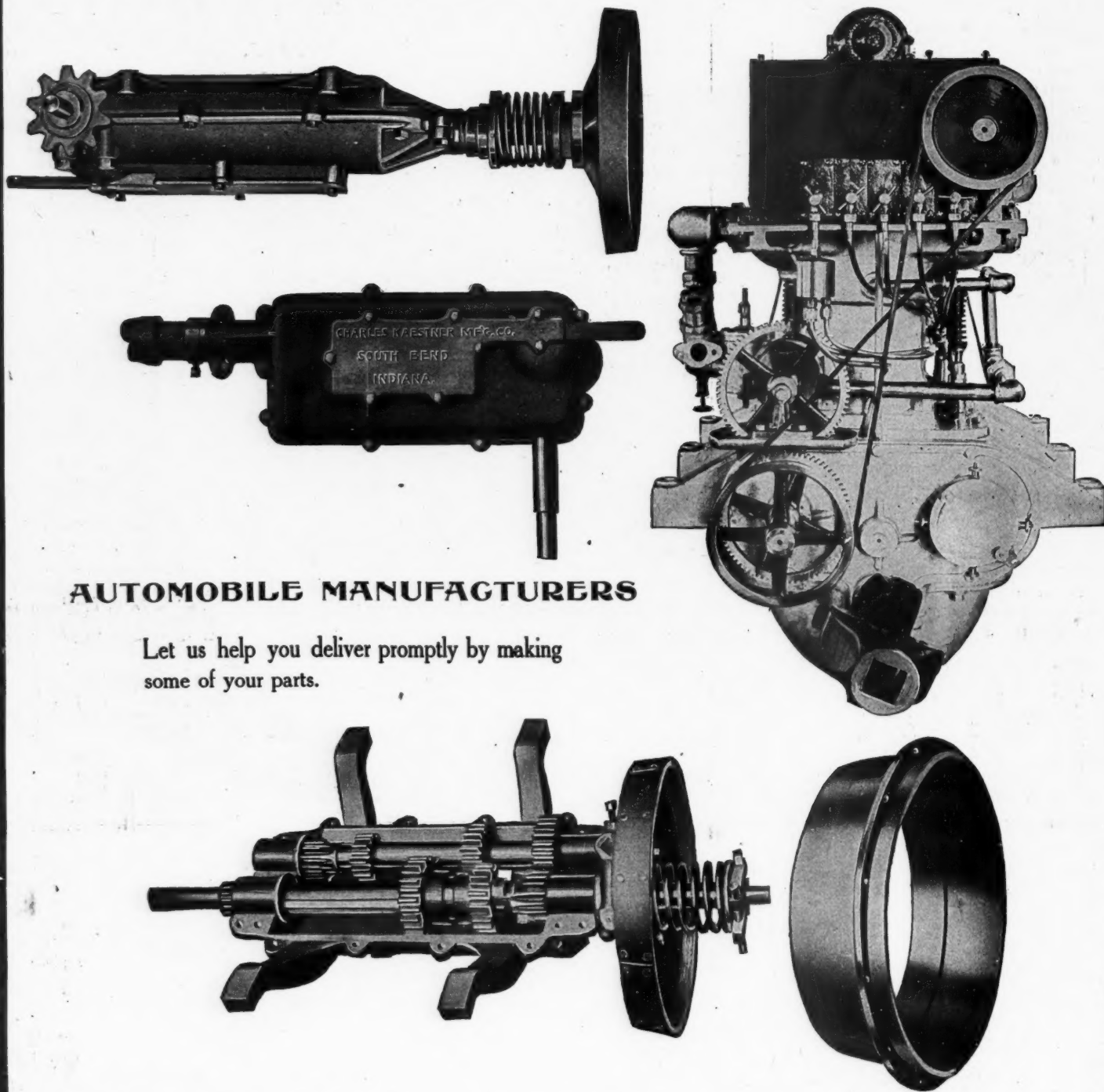
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Guaranteed

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"DELIVER THE GOODS"

A \$2,000.00 delivery wagon complete and modern in every essential for \$1,250.00.

We make commercial cars of one Standard design or of special construction to meet your requirements, and make *commercial cars only*. By specializing on this line we lead the field and make better, stronger and more practical cars than any other line on the market.

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We want to get in touch with live agents who can push our cars as they deserve to be pushed. Some good territory yet unassigned. Write us today.

306 WOODWARD AVENUE

Rapid Motor Vehicle Co.

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Mere price does not always represent actual cost.

The first price of a car may be but a trifle compared to the expense of operation and maintenance.

A \$1,200 car may cost as much again in repairs before the season's end.

All depends upon whether a car was made right in the first place.

One motorist, Mr. H. P. Dyer, of Cleveland, ran a Winton car almost every day for three years at a total repair expense of \$22.50.

Because his car was made right. It was a Winton. All Wintons are made right.

The 1905 Winton is a better car than any ever made before.

It is EASIER TO GET AT. All working parts almost instantly accessible. Don't have to tear down the car to reach them.

It is EASIER TO UNDERSTAND. Because our new construction is the simplest yet devised.

It is EASIER TO MAINTAIN. No waste of power through chains or belts. No damaged bearings through faulty lubrication. No heavy battery expense—because we have magneto ignition and use batteries for starting only.

It is EASIER TO MANAGE on the road. Screw and nut steering gear cannot wedge and "ditch" car and passengers. Winton air control gives any speed from four to 60 miles an hour without moving a lever.

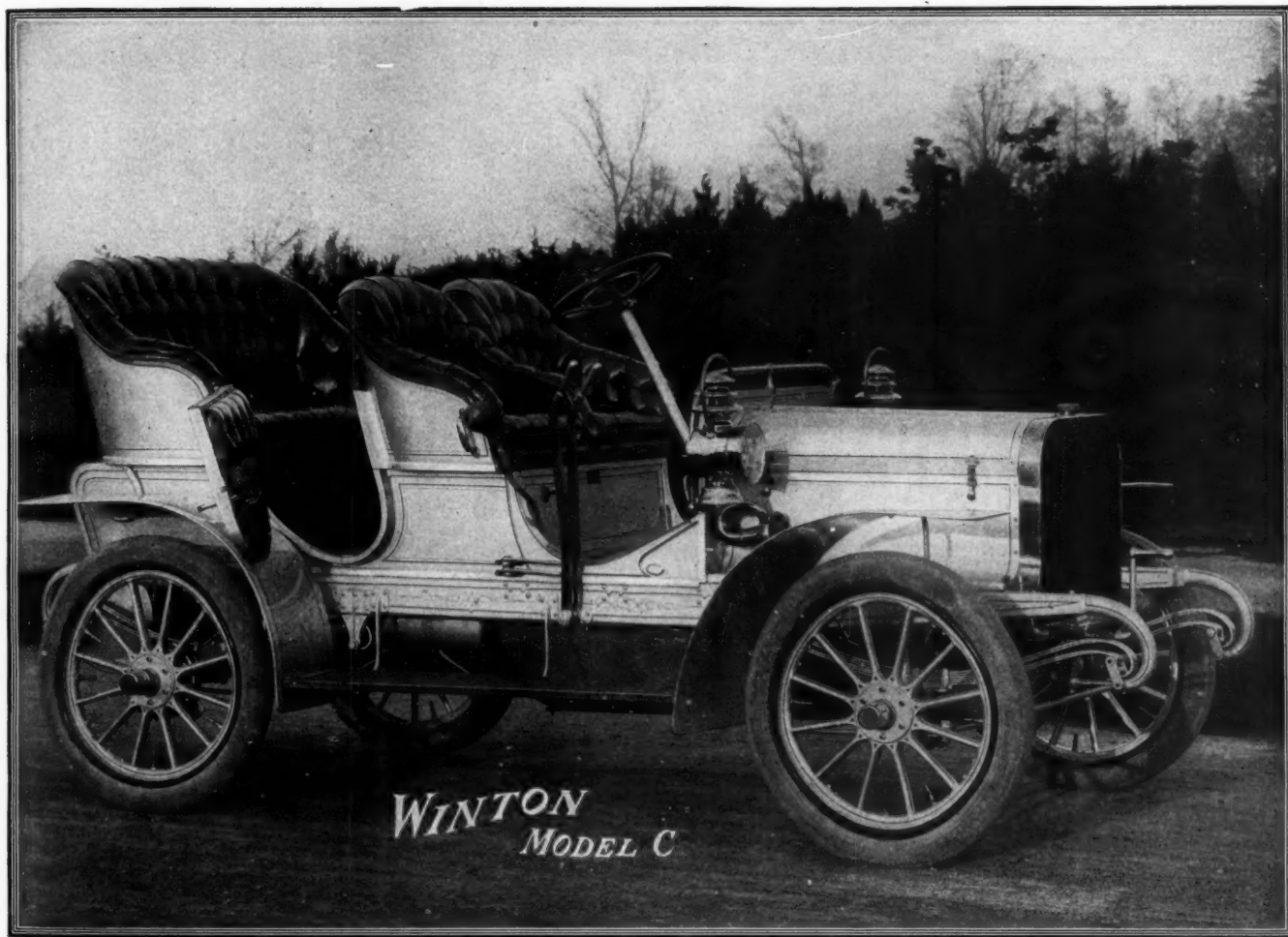
It is EASIER TO RIDE IN. Luxuriously comfortable upholstery and those remarkable Winton Twin-Springs not only make motoring pleasant for passengers, but also extend the life of the engine and save half the wear on the tires.

These are outline statements of Winton facts. Read the details in catalog No. 2.

FOUR CYLINDER VERTICAL MOTORS ON ALL FIVE MODELS. Model
\$3,500. Limousine, 24-30 h. p., \$3,500

THE WINTON MOTOR CARRIAGE CO.,
 BRANCHES IN CHICAGO, NEW YORK, BOSTON, PHILADELPHIA

WINTON



Model C, 16-20 h. p., \$1,800. Model B, 24-30 h. p., \$2,500. Model A, 40-50 h. p., \$3,500. Limousine, 40-50 h. p., \$4,500.

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Ordinary men pass muster until confronted with emergencies, and ordinary tires look good enough when brand new, but should be tagged: "Tender and not very true."

Goodrich Tires are Extraordinary Tires

Fit all roads.

Require little care or attention and cost less (mileage considered) than any other tire.

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'CONTINENTAL' DETACHABLE TYRES

The price will remain the same:
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CONTINENTAL TIRES



This concern found after thorough tests that it is safe to depend on **Continental Quality**. Send for dealer's agreement at once to Department M. A.

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Factory: Hanover, Germany.

298 BROADWAY, NEW YORK CITY.

EMIL GROSSMAN, General Manager.

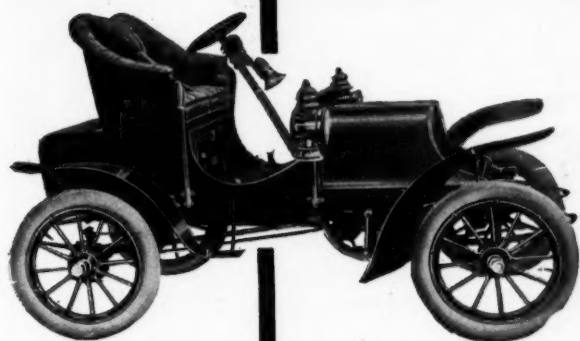
Samson non-skid covers on Continental Tires now in stock. Send for Price List.

See our exhibits at Boston, Cleveland, Buffalo and Washington, D. C.

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Can you afford to buy a large heavy car, with its great cost of maintenance, when you can get a car that will go more miles in an hour, with more comfort and delight, for less money, with less cost of maintenance, and, above all, a car that will be up-to-date next year?

We are talking about the

FRANKLIN

12 horse power Light Tonneau. There is no other car in the world like the Franklin or nearly like it. It takes you to the very heart of the motoring question.

Six Models for 1905

Runabout

20 H. P. Touring-Car

Light Tonneau (3 styles)

30 H. P. Touring-Car

Send for catalogue and "Coast to Coast" booklet.

H. H. Franklin Mfg. Co.

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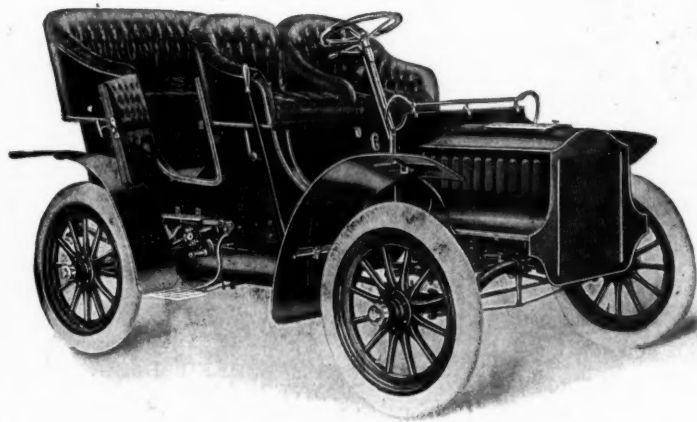
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Is delivered to the road wheels of our 1905 cars than ever before. Our popular priced models possess all the essential features of the most expensive touring cars. They are splendid hill climbers—are capable of taking four people anywhere that wheels will go—as fast as ordinary roads will permit.

For the man who wants a "big" car we have brought out our new four cylinder, 30 horse power motor, planetary three speed transmission, operated by **one** lever; shaft drive. Side entrance body, of wood or aluminum, and, like all our former models, it is, in every way, more car



Non-Detachable, Side Entrance Touring Car. Price, \$950

Than You Pay For

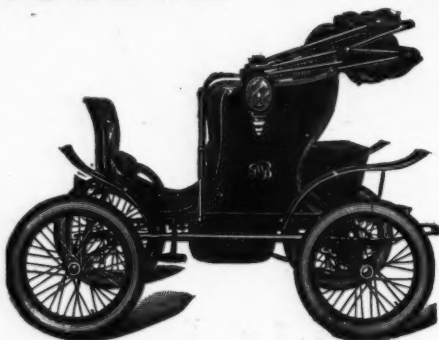
—more power, more speed, more reliability, more comfort, more general excellence—far more. We want you to know more about our cars for this year. Send for Catalogue.

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THE LIGHTEST
THE STRONGEST
MOST DURABLE
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BEST FINISHED



ABSOLUTELY SAFE
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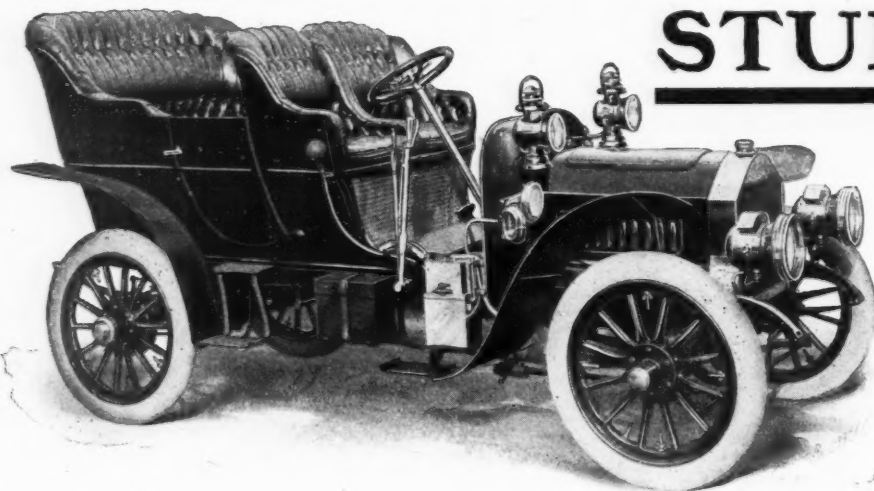
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Attractive in Rich Finish and Design. ✱ Simply Manipulated. ✱ Always Satisfactory.
A Carriage Any Lady Can Drive.

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MODEL 9503

SPECIFICATIONS:

MOTOR: Four-cylinder vertical, 20 to 24 horsepower. TRANSMISSION: Sliding Gears. SPEEDS: Three forward and one reverse; four to forty-five miles per hour. STEERING: By wheel and irreversible. BRAKES: Two entirely independent systems. Hand lever, internal expanding on both rear hubs; foot lever on drive shaft. IGNITION: Jump spark with dynamo and supplementary storage batteries. CARBURETER: Float feed with 1905 refinements. COOLING: By pump and cellular radiator. GASOLINE CAPACITY: 14 gallons. LUBRICATION: Positive with mechanical oiler, with sights located on dash. COMMUTATOR: Accessible and maximum wearing capacity. FRAME: Pressed steel. WHEEL BASE: 96 inches. VALVES: Mechanically actuated. AXLES: Front axle tubular steel; rear axle so arranged that no strains from the weight of the car fall on the driving shafts.

No. 9503 STUDEBAKER 4-CYLINDER GASOLINE TOURING CAR
BUILT FOR STRENGTH, SPEED AND ENDURANCE

Ease of control and operation unsurpassed. Each vital part tested beyond any possible demand. : : :
"STUDEBAKER QUALITY" THROUGHOUT

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STEERING GEAR, Complete	CHAINS	COUNTERSHAFT and REDUCTION GEARS
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Selling Agent: HAYDEN EAMES, American Trust Bldg., Cleveland

Our Goods are of the Highest Quality



And are recommended by many of the best makers
of Automobiles in America

We make Drop Forgings and Universal Joints of every description especially Bevel Gears, Steering Knuckles and Yokes.

STEERING GEARS

Staff, Double Control and Wheel, complete ready to attach to an automobile. Also Radiators, Circulating Pumps, Couplings, etc.

Estimates on all kinds of Automobile work cheerfully given

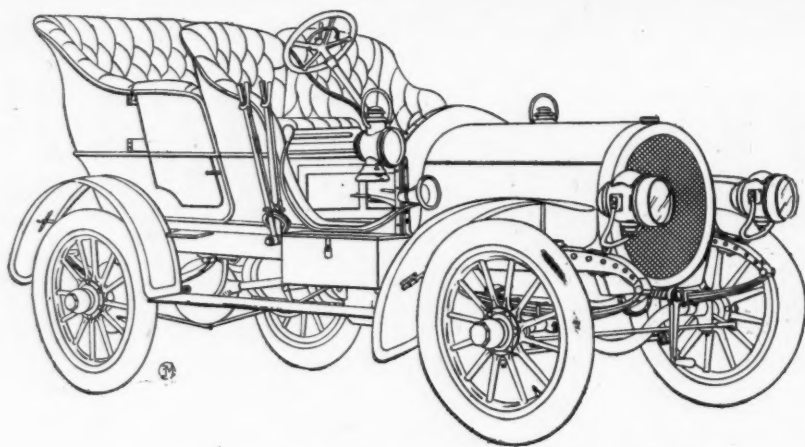
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The Hussey Drop Forge & Mfg. Company

AXTELL STREET

CLEVELAND, OHIO



NATIONAL Model "C" Gasoline Touring Car

Five passenger, side entrance body, detachable tonneau, best of finish and trimming, new round radiator, oval hood, four cylinder $4\frac{1}{4} \times 5$ vertical, bevel gear drive, double ball-bearing slide gear transmission—direct on high, hardened steel gears, gear-driven commutator, rear wheels revolve on double ball-bearings on outside axle tube, all weight taken off inner axle and differential, spherical gear case, internal expanding metal to metal brakes, pressed steel frame, long wheel base, engine and transmission on sub frame, double steering connections.

24-30 H. P.

Price, \$2,500.

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1006 East Twenty-second Street

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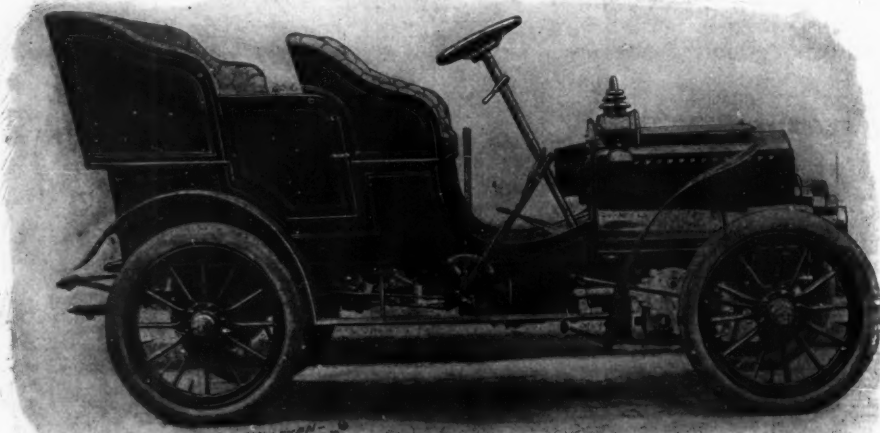
What Do You Want

in an Automobile? Is it service or adventure? A four to sixteen mile-an-hour speed always at your command, or a racing machine?

National Electric Vehicles

are thoroughly practical; simple in construction. Easy for any one to handle; noiseless, smooth running; go at desired road speed, yet under perfect control always. Ample battery equipment—the most powerful electrics made. Our Catalogue shows every style.

Electrics



Chainless Wolverine Model "D"

crosswise in front, and above all a car SIMPLE in construction and operation, should get a demonstration early in order to secure valuable territory. Best discount, and generous terms and contracts to agents. New Catalog.

PRICE, \$1,600

Reid Manufacturing Company

Dept. "D"

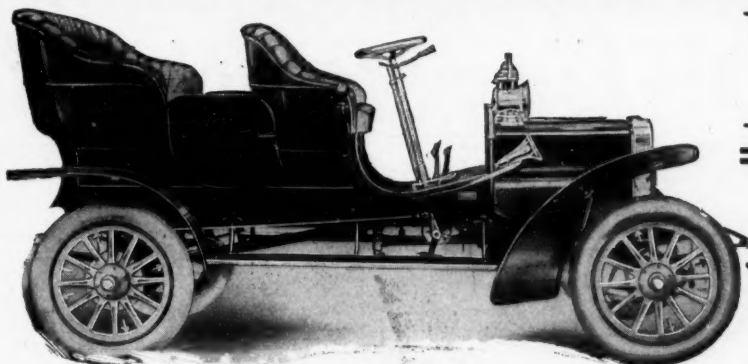
DETROIT, MICH.

Agents Who Want

A Seller

A CAR THAT WILL "STAY SOLD"

With all the specifications of \$3,000 cars, with 20 H. P., sliding gear transmission, 3 speeds ahead, direct drive, two cylinder opposed, set



Five-passenger, side entrance Northern Touring Car.
18 h. p., 100-inch wheel base, Price, \$1,700.

Northern

THE chief reason that automobile tires wear out, is that automobile manufacturers do not furnish tires large enough for the machines.

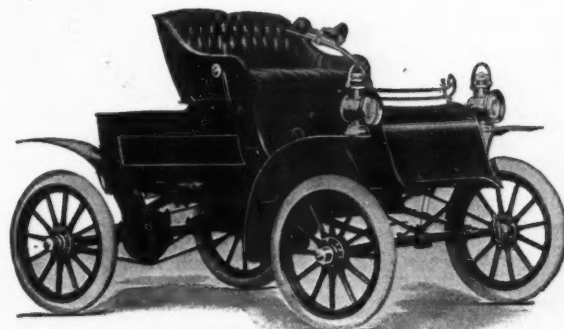
Undersized tires cannot be expected to last.

They do not last, for the reason that they are not selected with proper regard to weight, speed and power of the car.

The Northern is the only touring car at the price equipped with 4-inch tires.

Every other part of the Northern is equipped in the same generous way. This has much to do with Northern success.

Write for new Catalogue No. 14.



Sturdy Northern Runabout, \$650.

NORTHERN MANUFACTURING CO., Detroit, Mich., U.S.A.

MEMBER A. L. A. M.

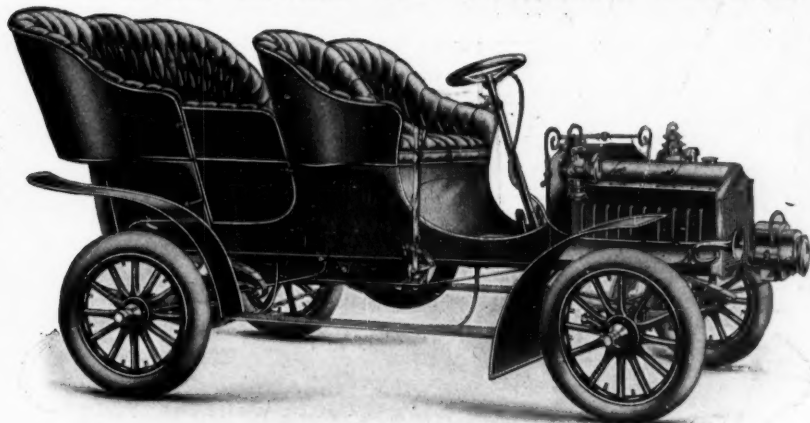
The Powerful DOLSON

The Strongest Car in America at the Price

\$1500.

COMPLETELY EQUIPPED AND READY FOR EXTENDED TOURING

ALL KINDS OF TALKING POINTS AND REAL MERIT



The DOLSON is the strongest, most powerful car in America for its price. It is a hill climber of par excellence, has plenty of speed, easy of control, beautifully designed, handsomely finished and upholstered. Wheel base, 90 inches. Wheels, 30 inches. Tires, 3½ inches front, 4 inches rear. Large, roomy tonneau, seating five persons comfortably.

In design, material, workmanship and specifications, the **DOLSON** compares favorably with high priced cars, and it is listed at a price that enables agents to sell quickly and duplicate orders. We can and will make deliveries as specified.

Don't wait too long. Get in line now.
Write for further particulars.

1905 MODEL C. Price, \$1500.00

Including two oil side lamps, acetylene head light, French horn, mats, full tool equipment, ready for extended touring.

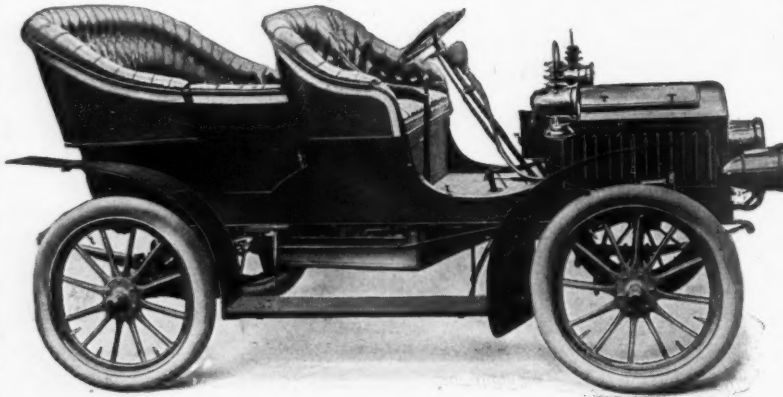
JOHN L. DOLSON & SONS,
NEW YORK AGENCY: C. E. NEAL, 164 East 85th Street

Charlotte, Michigan

Two Impulses with Every Revolution

This, the famous **Elmore Pathfinder**, which has demonstrated beyond a doubt the superiority of the two-cycle engine over the four-cycle engine. The most significant feature of the American Automobile situation today is the complete triumph the impulse-every-revolution idea, or with two cylinders, two impulses every revolution, as exemplified in the **Elmore**. That the **Elmore** does produce a constant torque; that it does utilize every particle of power and put a stop to waste energy; that it will take the steepest hill or roughest road at high speed; and that it has the most reliable self-starting engine in the world. For each and

every one of these claims overwhelming proof has been produced. The whole trend of expert and popular opinion is rapidly being directed toward the two-cycle engine.



You owe it to yourself to see this car which will astonish you, not only by its fine appearance, but by its excess power and its extraordinary control on the high speed.

Send for our full line of literature: The booklet illustrating the 6,000 mile trip; our catalogue; explanation of engine, and the opinions of people who have used our cars—all sent free, or if you wish, we will send you a 10x12

Photograph of the **PATHFINDER** on receipt of 10 cents in stamps.

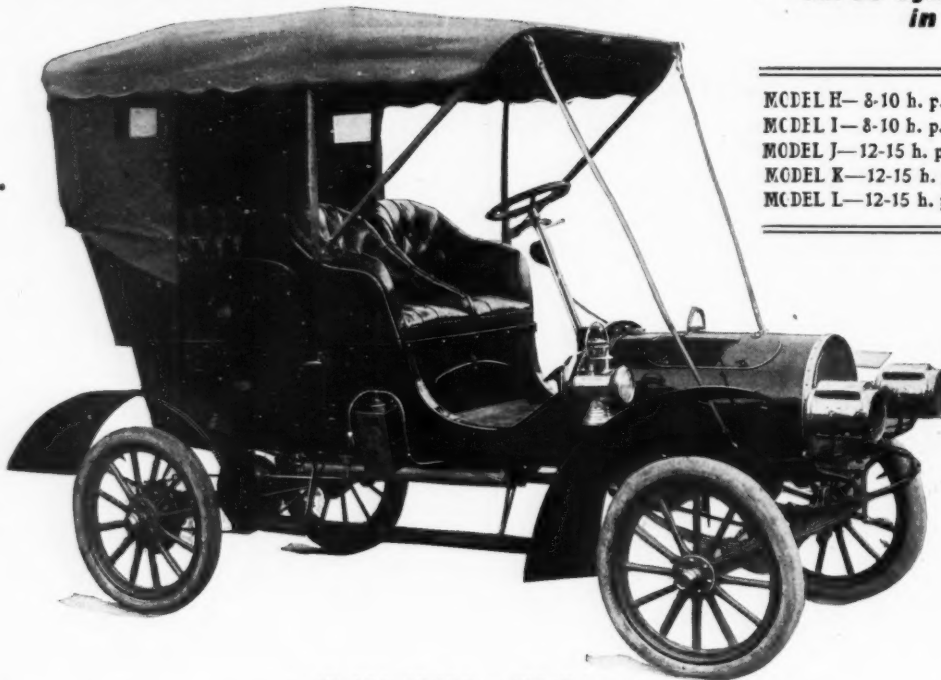
Elmore Manufacturing Company

804 Amanda Street
CLYDE, OHIO

Members of the Association of Licensed Automobile Manufacturers.

CAMERON King of all Weathers

Three cylinders--Air cooled--Motor
in front--Shaft drive



Model L, 12-15 h. p., Side Entrance

MODEL H—8-10 h. p. 2-cylinder Runabout	\$ 675
MODEL I—8-10 h. p. 2-cylinder Light Tonneau	775
MODEL J—12-15 h. p. 3-cylinder Special Surrey	1,050
MODEL K—12-15 h. p. 3-cylinder Runabout	950
MODEL L—12-15 h. p. 4-cylinder Side Entrance Tonneau	1,050

Branches

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THE JAMES BROWN MACHINE COMPANY

Established 1829

PAWTUCKET

RHODE ISLAND

THE
E. H. V.
COMPANY'S

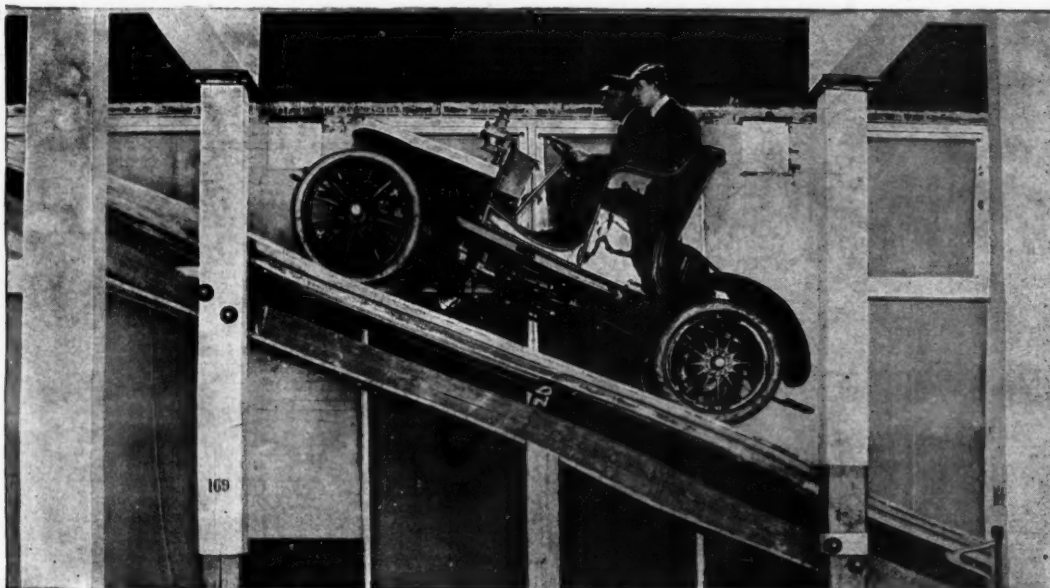
Compound Gasolene Runabout

THE RUNABOUT THAT CLIMBS

QUIET but
has no
MUFFLER

Price
of
Runabout,
\$1200

With
Side
Entrance
Tonneau,
\$1400



Aluminum
Body
and
Fenders

Sliding
Gear
Transmission

Three
Speeds
Forward
and
Reverse

12—15 HORSE POWER RUNABOUT GOING UP AN ACTUAL 40 PER CENT GRADE.

THE E. H. V. CO.,

::::

MIDDLETOWN, CONN.

Notice to the Trade.

We have entered suit against the United States agency of the Michelin Tire Co. for infringement of G & J Patents, and the trade is warned against the purchase of such tires.

The following manufacturers are licensed under G & J patents:

Hartford Rubber Works Co.
The B. F. Goodrich Co.
Diamond Rubber Co.
Morgan & Wright
Fisk Rubber Co.

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Goodyear Tire & Rubber Co.
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G & J TIRE CO., MAIN OFFICE AND FACTORY **Indianapolis, Indiana**



DIETZ

Lamps are made wherever possible with machinery—all alike and all good. The parts are always interchangeable. No hand work can equal the strength and symmetry of that done in our up-to-date factory devoted to the manufacture of **Modern American Goods by Modern American Methods.**

Notice the convenient and safe way in which we fasten the oil pot to the lamp. A turn of the hand and it is off—a turn of the hand and it is on, and when on, absolutely safe from falling off.

All live dealers sell them at reasonable prices.
Send for circular

R. E. Dietz Company

37 LAIGHT ST., NEW YORK

ESTABLISHED 1840



FIVE TON TRUCK.

Gasoline Freight Trucks and Observation Cars

**ANY CAPACITY OR SPEED
WRITE FOR ESTIMATES**

CONSTRUCTION Heavy and Substantial. Safety factor of Five. STEEL FRAME. Size of Platform to suit purchaser. Enclosed Cab. ENGINE, four cylinder, vertical, Improved Design.

SLIDING GEAR TRANSMISSION; Three speeds ahead (maximum 10 miles per hour) one reverse.

Now operating successfully under Commercial Conditions, demonstrating Economy and Reliability.

WHITING FOUNDRY EQUIPMENT CO.

GENERAL OFFICE AND WORKS: HARVEY, ILL. (CHICAGO SUBURB) U. S. A.

CHICAGO OFFICE: 1547 MARQUETTE BUILDING

THE STRUGGLE FOR SUPREMACY -
WE DOWN THEM ALL

RUSHMORE DYNAMOWORKS
 PLAINFIELD, N. J. NEW JERSEY

THE AUTO CLUB DECIDES TO SETTLE THE QUESTION

NON-SKIDDING

SAMSON

Leather Tire and Protector

NON-PUNCTURABLE

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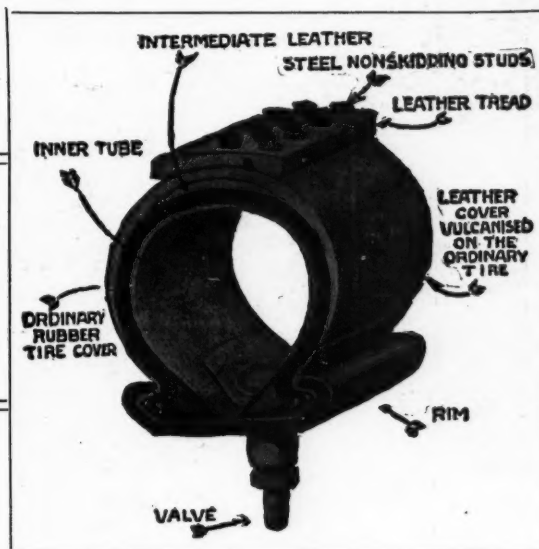
Vienna

Chicago Agent

J. B. McKEAGUE
 324 Dearborn Street
 Chicago

Boston Agent

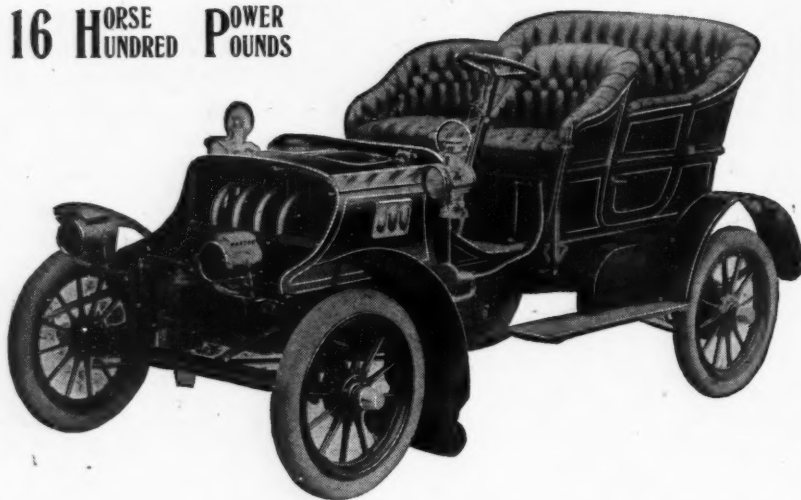
JAMES COGGESHALL
 16 Columbus Ave.
 Boston



A. E. GALLIEN, Mgr.
 12 West Thirty-third Street, New York City
 Opposite The Waldorf

The Marion Car

**16 HORSE POWER
HUNDRED POUNDS**



Built to Run and Last for Years
 Air-cooled 16 h. p. vertical motor
 4 cylinders, 4 inch stroke, 4 inch bore
 Side entrance detachable tonneau
 Double chain drive
 High road clearance
 Long wheel base (96 inch)
 Full elliptic springs, guaranteeing ease
 and comfort on the road
 Simple control and powerful brakes
 Complete equipment
 Finish of the highest possible quality
 Price, complete with tonneau, \$1,500

Marion Motor Car Company, :: Indianapolis, Indiana

New York, corner 38th and Broadway

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A FEATURE OF THE SEASON 1905

The Automobile Street Car

Adapted for
**Cross-Town
 and
 Rural Lines**



BUILT BY

The Auto-Car Equipment Company

BUFFALO, N. Y., U. S. A.

Trucks
 Delivery Wagons
 Sight-Seeing Cars

COMMERCIAL VEHICLES

Omnibusses
 PASSENGER BREAKS
 Trackless Trolleys

"The Maxwell"

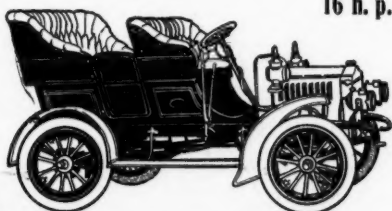
There is not one complicated detail throughout "Maxwell" construction. The number of parts has been cut down to a minimum, and each part has been treated as a special problem and carefully worked out to perfection. It is fundamentally a car easy to explain, easy to understand and easy to operate.

The owner of a "Maxwell" is absolutely sure of two things.

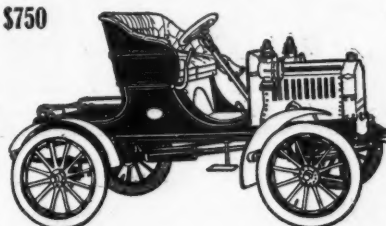
First, that no car in the market at any price is more reliable than his, and second, that he owns the one car before the public today in which, through its rare simplicity of construction, there is nothing to do but ride.

16 h. p. Touring Car, \$1400

8 h. p. Tourabout, \$750



The "Maxwell" cars have no pump (thermo-siphon). Their double opposed motor is in front under the hood and easily accessible in every part. They have Bevel Gear Drive. Metal Bodies. Transmission Case and Crank Shaft in Aluminum casting. "Perfectly simple and simply perfect."



Maxwell-Briscoe Motor Co.

TARRYTOWN, N. Y.

New York City Salesroom, 317-319 W. 59th St.

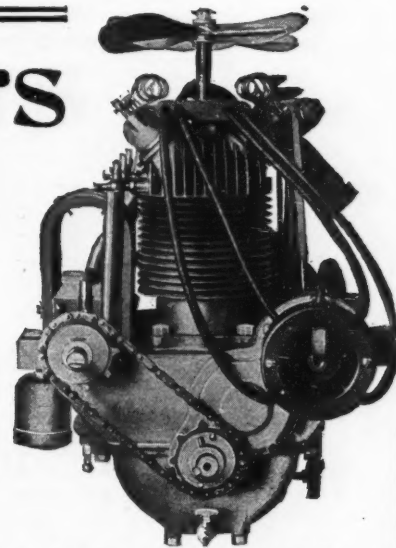
Merkel Auto Motors

**High Speed, Four-Cylinder Vertical
Air-Cooled Type**

Noiseless running. Piston rings and bearings ground to exact size. Connecting Rods drop forged. Heating surface minimized. Perfect ignition. No hammering of cam or valve lifters. No dry cells. Engine starts with one throw of the crank.

Only Successful Cold Weather Motor

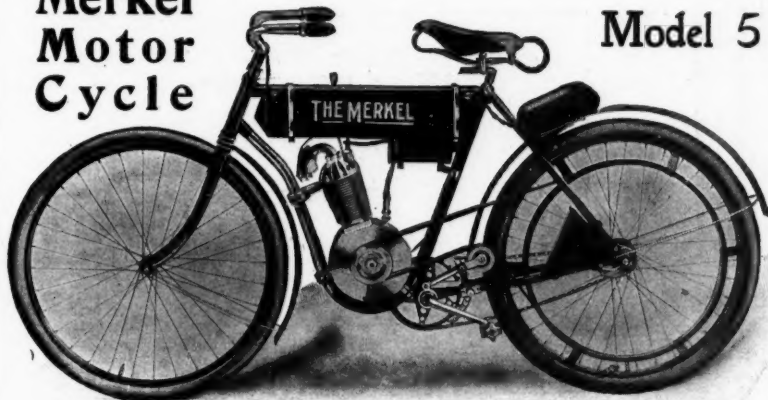
Carbureter compensating float feed type. Positive action. Splash system lubrication. Mechanically operated valves.



Form H—Air-cooled—12-14 H. P.
Compact, Efficient—Weight 220 lbs.
Speed variation 500 to 2500 R. P. M.

**Merkel
Motor
Cycle**

Model 5



Built for hard and lasting

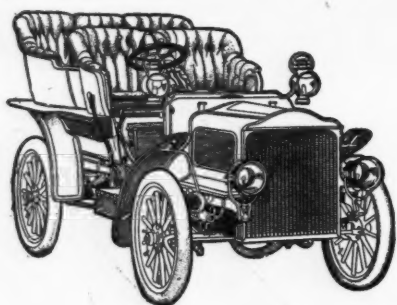
Service. Spring frame. Easy to operate and comfortable to ride. Very speedy. Moderate cost. Write for prices and particulars.

Address Dept. G.

MERKEL MOTOR CO.

FACTORY
LAYTON PARK

Milwaukee, Wis.



PERFORMANCES OF THE **15-H. P. WHITE**

(Stripped and provided with wind shield)

at

ORMOND, FLA.

Time Trials

1 Mile - - 53 Seconds
1 Kilometer 32 4-5 "

Class B Races

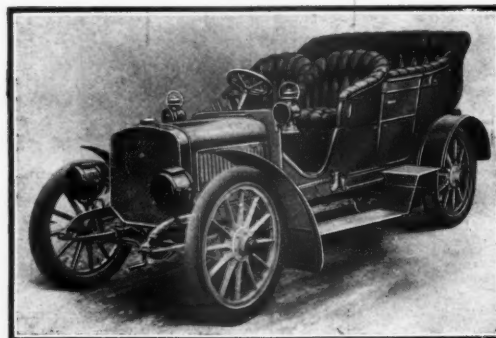
(851-1432 Pounds)

First in One Mile Race

(Time, 51 4-5 Seconds)

First in One Kilometer Race

WHITE SEWING MACHINE **COMPANY**
CLEVELAND, OHIO



THE LOZIER MOTOR CAR, 30-35 H. P.

LOZIER

MOTOR
CARS
MARINE
MOTORS
AND
MOTOR
BOATS
ARE
HIGH
GRADE
ONLY

A Separate
Catalogue
for each of
our Products.
Write for the
one you want

The LOZIER MOTOR
COMPANY Suite 6
1 Broadway New York

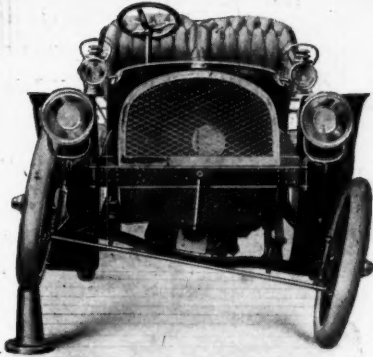
LOZIER



A LOZIER 31-FOOT CABIN CRUISER

The Marmon

"A Mechanical Masterpiece"



ALL
AUTOMOBILE ILLUSTRATIONS
DO NOT ILLUSTRATE

This One Does

WHEN we speak of the marvelous flexibility of the Marmon, when we say that it is impossible in any other car, American or foreign, we don't depend on mere language to support.

**Notice the wheel raised a foot;
Yet the body isn't tilted.**

Even a novice can see at a glance how the Marmon carries you over obstacles and through ruts in rough roads with a luxury of motion that is unrivaled. So much for the effect. Here's the cause:

Double Three-point Suspension

the acknowledged but unattainable ideal of many other studious builders. It is an exclusive Marmon feature, demonstrated in three years of unsparing test and heartily endorsed by every Marmon owner. Cast aluminum body and simple accessible mechanism are on separate frames, each suspended on three points. The resulting perfect elasticity keeps the transmission always in alignment, and allows every working part to live long and do its full duty by eliminating all the binding strains inevitable in the customary rigid four-point suspension. It also enables us to use a perfectly rigid shaft drive without Cardan joints, delivering the full power of the motor to the wheels.

That's just one feature. There are others, including novel and perfect automatic force lubrication that marks the end of oil troubles, and advanced type of four-cylinder air-cooled motor.

These features are radical departures, but they are not mere "novelties." They are solid mechanical principles applied to the automobile by a company whose products of machinery have maintained a high standard of excellence the world over for fifty years, backed by a guaranty that has never been questioned.

Send for Booklet No. 1.

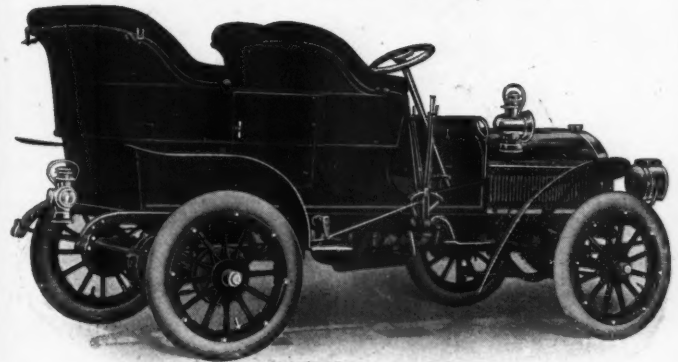
Nordyke & Marmon Company

Established 1851

INDIANAPOLIS, IND.

STEVENS - DURYEA GASOLINE AUTOMOBILES

Our Latest Product The New Touring Car



Model R—Four-Cylinder—Twenty Horsepower

Salient Features

ALUMINUM BODY

Side Entrance Tonneau
Pressed Steel Frame
Three Speeds and Reverse
Three Brakes

FOUR INDIVIDUAL CYLINDERS

Bevel Gear Drive
Water Cooling
Standard Equipment
Weight, 1650 lbs.

Great Strength—High Power—Light Weight

Price - - \$2,500

Send for Beautifully Illustrated
32-page Booklet, containing full
details of both Models "L" and "R"

AGENTS

Write for Special Proposition on unoccupied territory.

It will surely interest you.

AGENTS

You know what our famous Runabout Model "L" has accomplished. Ascertain the claims we make for our Touring Car.

J. STEVENS ARMS & TOOL CO.

705 MAIN STREET

CHICOPEE FALLS, MASS., U. S. A.

Member Association Licensed Automobile Manufacturers

The Only Real Automobile Tire



NOTE THE CUSHION

NOT Merely an Enlarged Bicycle Tire

but a tire designed, developed and constructed specially for use on automobiles, and supplied with a **FLAT** rim (don't overlook that) and a fastening in keeping with the design of the tire. And what is very much to the point, it is a tire and a fastening that have been tried ruthlessly for two years and found not wanting.

*If you would know more about it,
permit us to mail you a copy
of our Booklet.*

THE FISK RUBBER COMPANY
Chicopee Falls, Mass.

BRANCHES—New York: 754-756 Seventh Ave.; Chicago: 1251 Michigan Ave.

BOSTON,
SPRINGFIELD,
SYRACUSE,
BUFFALO,
DETROIT,
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SAN FRANCISCO,
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MINNEAPOLIS,
DENVER,
LOS ANGELES,
LONDON.

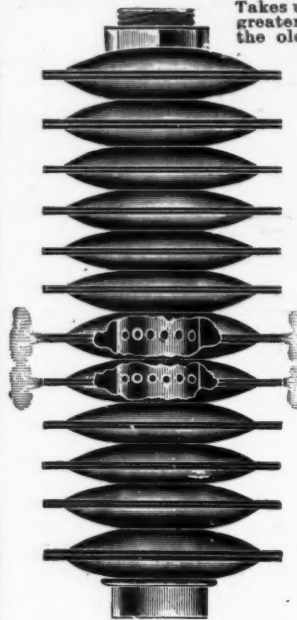
WHOLESALE

RETAIL

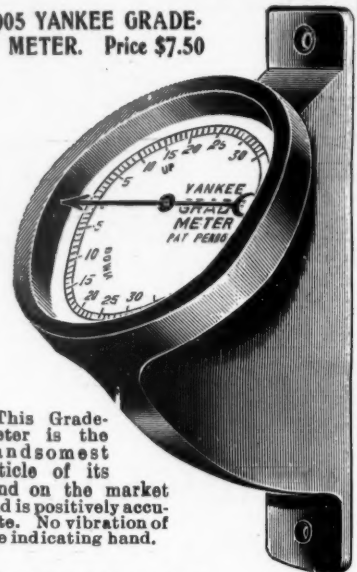
THE LARGEST MFR OF **AUTO SPECIALTIES** IN THE WORLD

1905 Yankee Non-Vibrating Steering Wheel. Price \$10

Takes up all the vibration and at the same time has greater tensile strength for steering purposes than the old-fashioned wheel. Very ingeniously constructed. Write for descriptive circular.



1905 YANKEE GRADE-METER. Price \$7.50



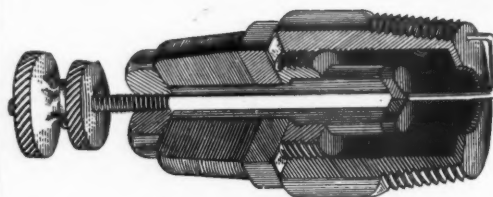
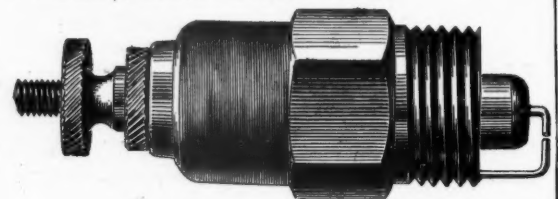
This Grade-Meter is the handsomest article of its kind on the market and is positively accurate. No vibration of the indicating hand.

YANKEE MICA SPARK PLUG

Closed

End

\$1.50



Open End
\$1.00

Both Guaranteed 90 days. Thousands in use and no complaints.

Yankee Cut-Switch
Price \$1.50

Switch blade instantly detachable, which locks your car in your absence. Cannot be short circuited. May use two sets of batteries, separately or alternately, or you may double your amperage at will.



We also Manufacture QUICK CHAIN REPAIRERS, sell for 50c; FOOT BELLOWS FOR HORN, sells for \$3.00; WIND SHIELD FOR TONNEAU; BATTERY CONNECTIONS, sell for 36c doz.; REPAIR PLASTERS, \$1 each. We manufacture 30 other good selling Auto Specialties. Cuts furnished free to Jobbers and Dealers. **BIG FREE CATALOG.**

Discount to Manufacturers, Jobbers and Dealers

E. J. WILLIS CO., 7 Park Place, N. Y.

1905 ANNOUNCEMENT

The Autocar

A New Type

We believe that the Autocar in all its types represents the highest excellence in automobile design, workmanship and material. Every Autocar is built on honor. We feel, therefore, that our new type will meet with a cordial reception.

This car, **Type XI.**, larger and more powerful than the other types, has a four-cylinder vertical engine of 16-20 horsepower. The body is built on the newest and most approved French lines. The front seat is divided and both front and rear seats are large and comfortable.

While this car is built upon the tried Autocar principles which have been so splendidly proven, it shows a number of very important improvements making for increased simplicity, ease of operation, safety and comfort.

In fact, though Autocars have always been noted for absence of bewildering intricacy of mechanism, yet no one can but be impressed with the extreme simplicity of this new car. It is a triumph in scientific construction and arrangement.

This car has more than met our highest expectations in the road test. In fact its performance has been a surprise to experienced automobile men. The power of the car carries it, fully equipped and loaded with five passengers up tested 12 per cent grades for instance, at 20 to 25 miles per hour on the direct drive, while on the level the car attains a speed of 40 to 45 miles. The car is a superior climber on any hill.

Altogether our eight years' experience has enabled us to produce in this type, a four cylinder car we are assured cannot be surpassed by any similar car at any price.

The Price of **Type XI.** is \$2,000. Ready for delivery January 16.

Type VIII.—Four-Passenger Car (at \$1,400) and **Type X.**—Runabout (at \$900) have made Autocar Reputation. Each stands at the head of its class for value and efficiency.

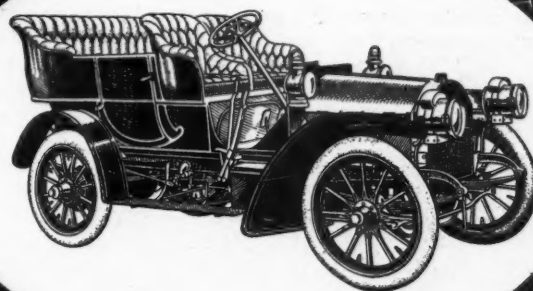
Catalogue descriptive of the 1904-05 types will be sent free upon request. This catalogue contains also addresses of our dealers throughout the country who will be glad to give demonstrations to prospective automobile purchasers and explain in detail the merits of our cars.

THE AUTOCAR COMPANY
ARDMORE, PA.

Member Association of Licensed
Automobile Manufacturers.

Peerless

The Car
of Achievement



Peerless Motors

have valves on top of cylinder instead of on the sides as other motors.

RESULT IS

a smaller combustion chamber—explosive force is directed principally on top of cylinder head—no force is wasted on offset posts. Hence there is greater motor efficiency.

1905 PRICES

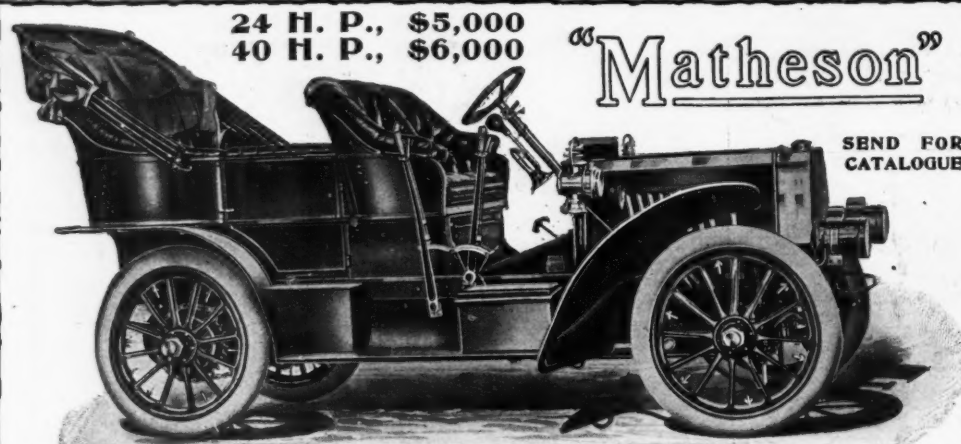
24 H.P.	30 H.P.	35 H.P.	60 H.P.
\$3,200	\$3,750	\$4,000	\$6,000

Send for Catalogue now ready.

PEERLESS MOTOR CAR CO.
CLEVELAND, OHIO.

Member A. L. A. M.

L. S. M. B. Co. CLEVELAND



24 H. P., \$5,000
40 H. P., \$6,000

"Matheson"

SEND FOR
CATALOGUE

"AMERICA'S FINEST MOTOR CAR"

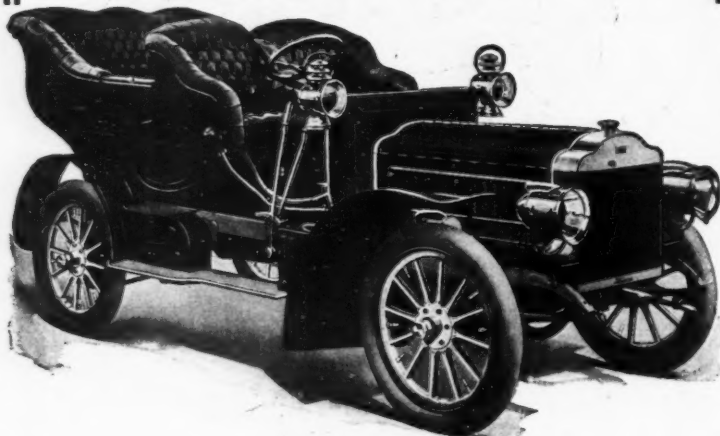
CHARACTERISTIC FEATURES:

Self-starting from the seat.
Practically noiseless.
Absence of vibration.
Four-cylinder vertical engine.
Valves, in the head.
Automatic carburetor, never requires adjustment.
Automatic speed control, by governor.
Automatic lubrication.
Single lever control.
"Make-and-Break" ignition.
Irreversible steering gear.
Four powerful brakes.
Timken roller bearings.
Armored frame.
Road clearance of 12 inches.
Side entrance.
Aluminum body.
Wheel base 106 inches.
Imported "Continental" tires.
Imported Honeycomb radiator.
Long life—insured by using greater factors of safety in every vital part than ordinarily employed.
Speed—Guaranteed 40 to 60 miles an hour, according to H. P. gear.

MATHESON MOTOR CAR CO., Holyoke, Mass.
New York Agents, SHEPARD BROS., 500 Fifth Ave.

DON'T YOU THINK SO?

The popular automobile of today must possess something besides a handsome body and wheels that will go 'round. The Thomas "Flyer" Touring Car possesses such a number of safety devices, anti-friction, anti-wear, fool-proof and lubricating devices that it takes a catalogue to tell it all. May we send one?



Thomas 40 Horse Flyer, \$3,000

At the New York, Philadelphia, Chicago and Detroit Shows, the Thomas "Flyer" booth was the center of attraction. Such a line has never been offered before.

Thomas 40 Horse Touring Car, 4 Cylinders, . . .	\$3,000
Thomas 50 Horse Touring Car, with Victoria Top, . . .	3,500
Thomas 50 Horse Limousine, . . .	4,500
Thomas 60 Horse Touring Phaeton, 6 Cylinders, . . .	6,000

E. R. THOMAS MOTOR CO.,
Members of Association of Licensed Automobile Manufacturers,
1202 Niagara Street BUFFALO, N. Y.

COUPE LIMOUSINE



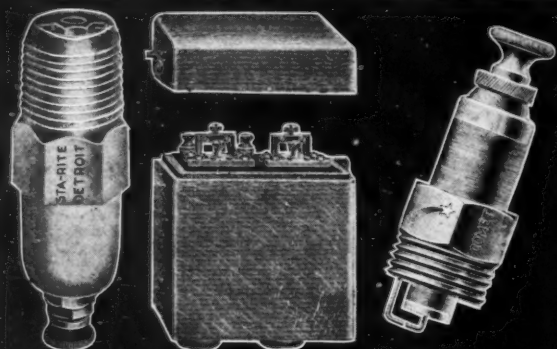
Capacity, five inside, and plenty of room at that. Finish and workmanship GUARANTEED equal to Brewster's best.

Let us tell you all about it in a personal letter—WRITE

The Chisholm-Philips Automobile Co.,
1322-1324 Euclid Avenue, :: :: Cleveland, Ohio

EXCLUSIVE AMERICAN AGENTS FOR THE SIMMS-BOSCH MAGNETO. USED ON 90 PER CENT OF ALL EUROPEAN CARS

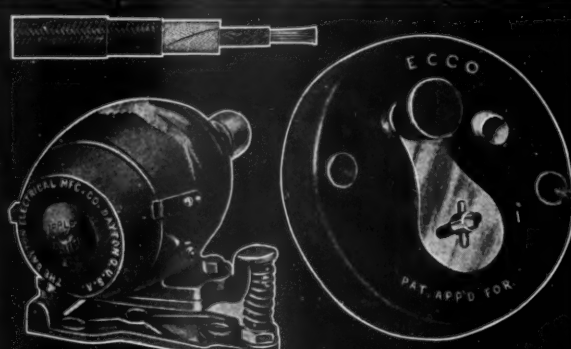
ALL KINDS OF IGNITION APPARATUS



AS WELL AS ALL KINDS
OF OTHER AUTOMOBILE
BUILDING MATERIAL.

**J. H. NEUSTADT
COMPANY**

826-830 S. Eighteenth St.
ST. LOUIS, MO.





Locomobile

15-20 h. p. LOCOMOBILE - - - \$2,800

Complete with 5 lamps, tools, spare parts and accessories

FOR style and beauty of line; for neat design; for strength and high power in proportion to weight, permit us to call your attention to our 15-20 h. p. gasoline touring car. The same carefully chosen material, the same high quality of workmanship and finish is applied to this model as to our 40-45 h. p. car.

The Locomobile Company of America, Bridgeport, Conn.

Member Association of Licensed Automobile Manufacturers.

New York, Broadway and 76th St.
Philadelphia, 249 N. Broad St.

Boston, 15 Berkeley St.
Chicago, 1354 Michigan Ave.

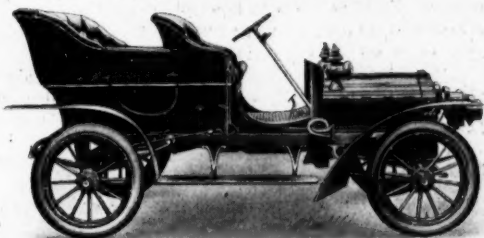
...THE... Stoddard-Dayton

A FREELY TALKED-OF CAR

Embodying every detail of modern mechanical construction and beauty of design.

4 Cylinder Vertical Motor. 25 Horse Power.
3 Speeds and Reverse. Sliding Gear Transmission. 1800 Pounds.

\$2,000.00

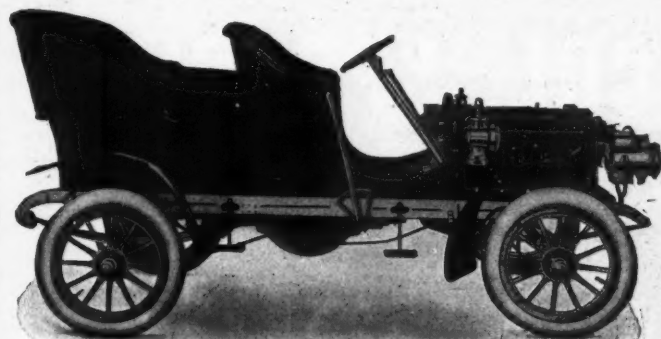


"That Car of Supreme Worth."

The Dayton Motor Car Co.
DAYTON, OHIO

Chicago and Vicinity
McDuffee Auto Co.
1449 Michigan Ave.
Chicago

New York and Vicinity
Maxwell-Briscoe, Inc.
317-319 W. 59th St.
New York



The WAYNE

The Wayne Model "C," price \$1,250, is a five passenger touring car, 16 h. p. double opposed motor, planetary transmission, 90 inch wheel base, double side entrance tonneau. In fact a \$2,500 car in everything but price.

The Wayne Model "B" 4-cylinder touring car has 24-28 horse power, bevel gear direct drive, sliding transmission, wheel base 102 inches, side entrance tonneau, weight 1600 lbs. Price \$2,000. This car has fewer parts than any 4-cylinder automobile made.

We shall be glad to send our catalogue to those who appreciate quality and reliability at a moderate price. Will you write us today?

We have some good territory open for Live Agents and have an attractive proposition to make, if you will

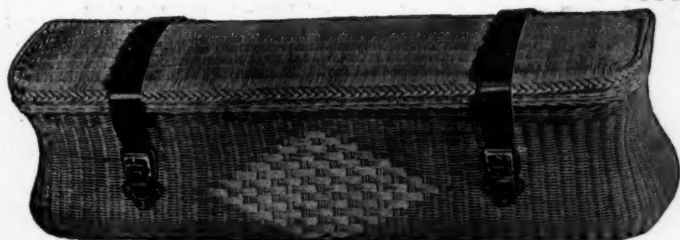
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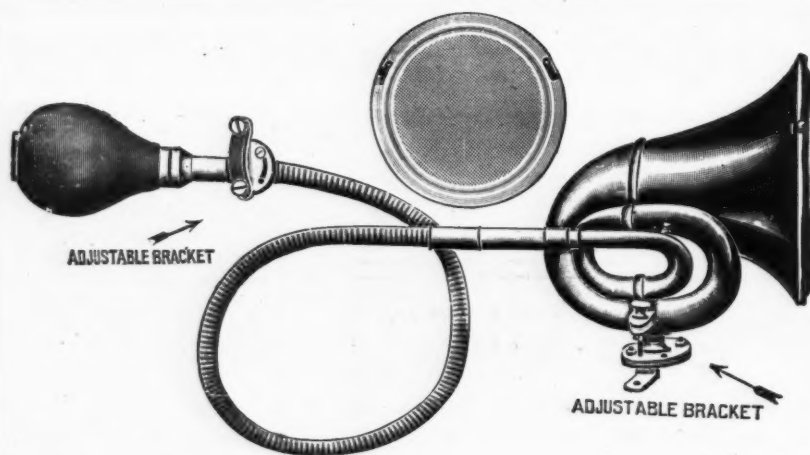
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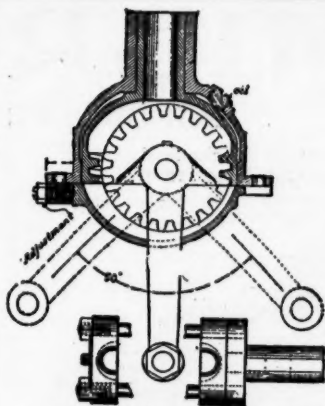
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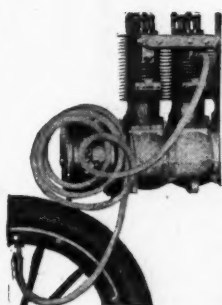


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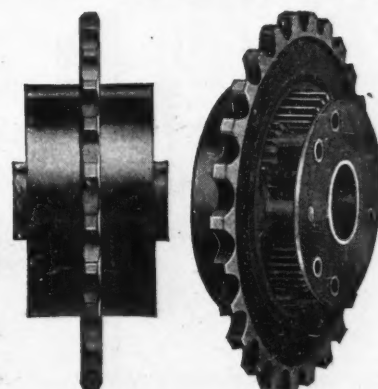
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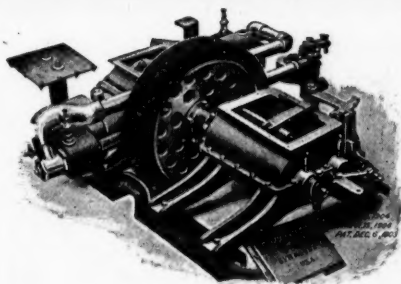


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BRENNAN Standard Motors

are unexcelled for simplicity of construction, substantial and large bearings, ease of adjustment. All parts unusually accessible for inspection.

Built in 6, 8, 12, 14, 16 and 20 h. p. Investigation solicited.

We make a specialty of Motors for

THOMAS MODEL 18, CADILLAC FORD AND OLDSMOBILE

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GENTLEMEN: The 14-H. P. motor which we purchased of you last January we have mounted in a car that weighs 1,850 pounds. Car has been driven 4,000 miles and the motor has given excellent results and drives the car 40 miles an hour. We made the run from Syracuse to Utica in 2 hours and 20 minutes. Total time from Syracuse to Albany 8 hours; time from Boston to Syracuse 20 hours.

The car weighs with two passengers and luggage 2,350 pounds. We also wish to state that after using several makes of carbureters that we obtained the best results from your make of carbureter.

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A perfect Horn for Automobiles, gasoline or steam. Blows a full blast from the exhaust with less than one pound pressure. Can be attached to the air tank or blown by steam direct.

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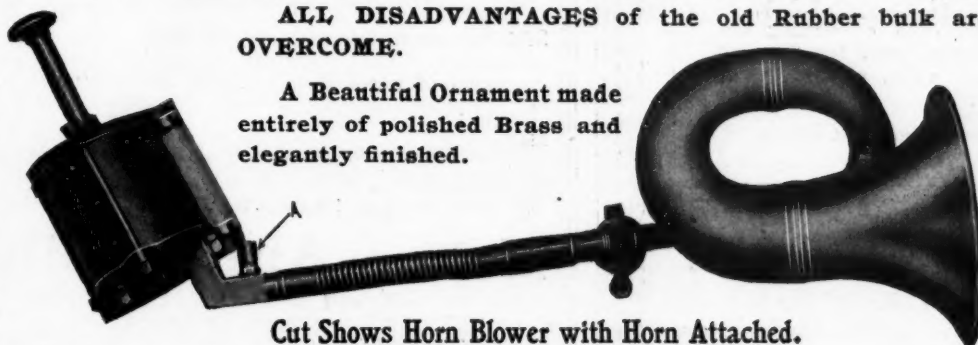
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A Beautiful Ornament made
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Cut Shows Horn Blower with Horn Attached.

Prevent Accidents

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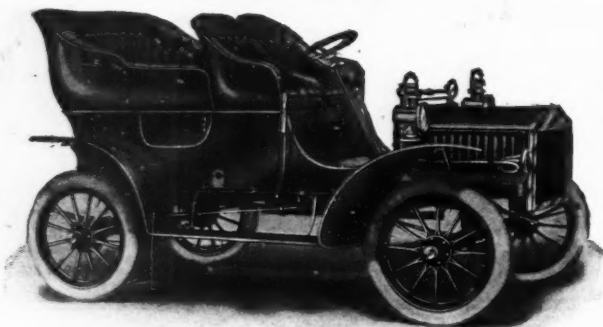
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Light Touring Cars
For 1905



Model "E," \$1,250. Carries 5 Persons.

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Ask for our Catalog and Agents' terms

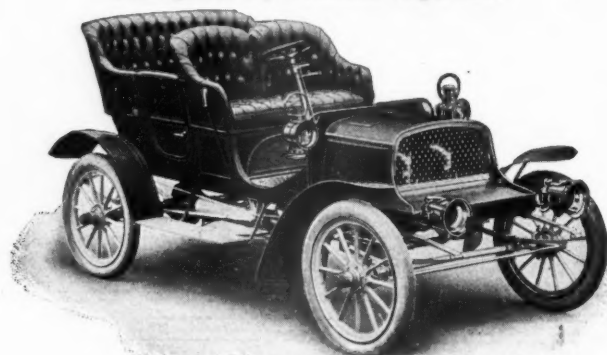
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The natural evolution of Mechanical
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"THE QUALITY CAR"

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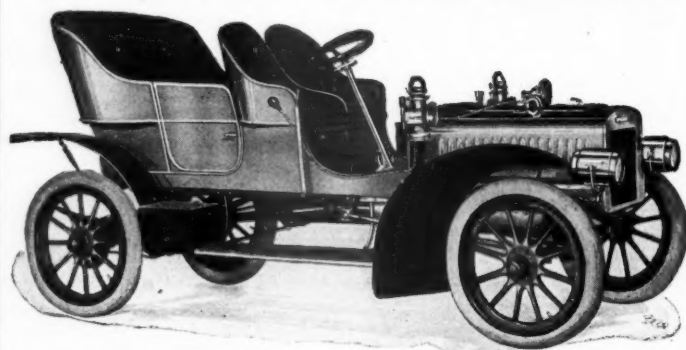
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Model "B" Touring Car.

The Power is High.
18 Actual H.P.

The Weight is Right.
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The Price is Low.
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Distinguishing features are:—Substantial construction. Simplicity of Motor. Accessibility of working parts. Easy Side Entrance Body.

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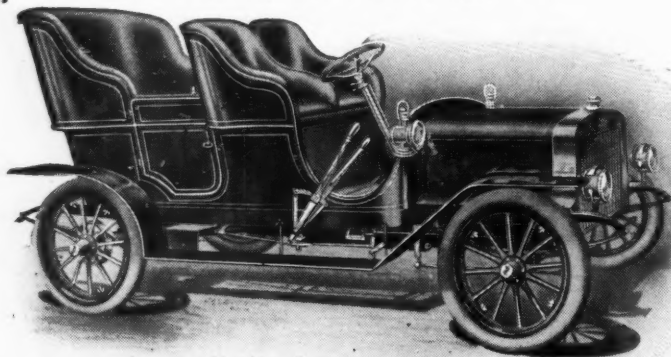
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92 inch wheel base.
Side entrance tonneau.
Pressed steel frame.
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Three speeds forward and one reverse.
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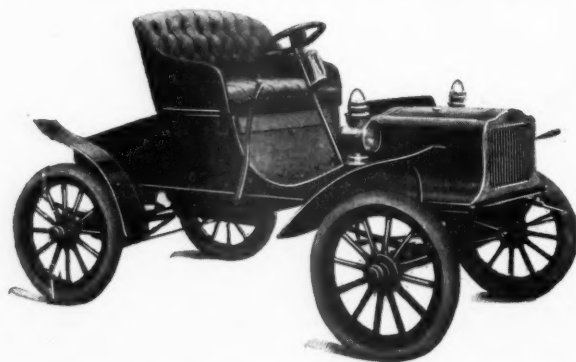
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The \$500 Gale



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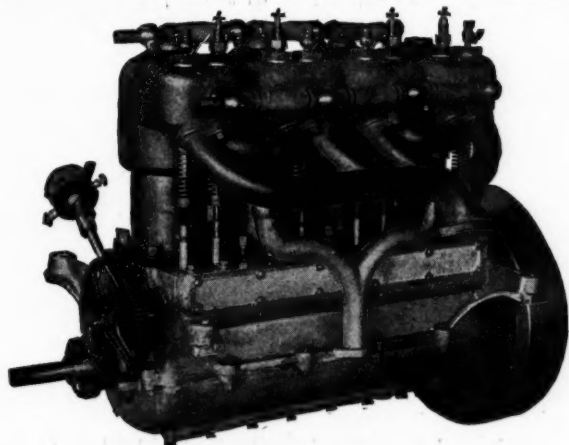
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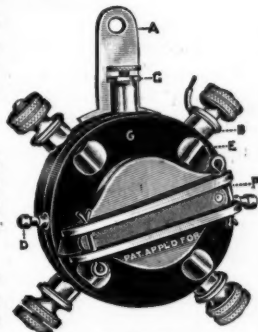
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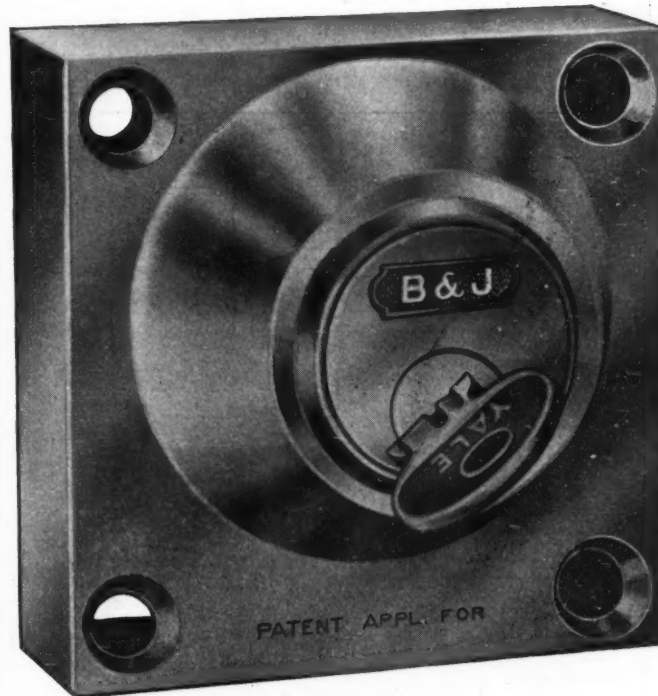
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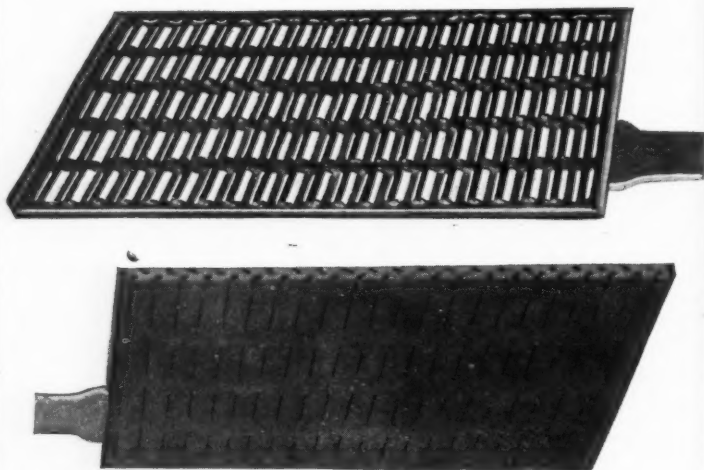
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As long as you have the key your car is safe

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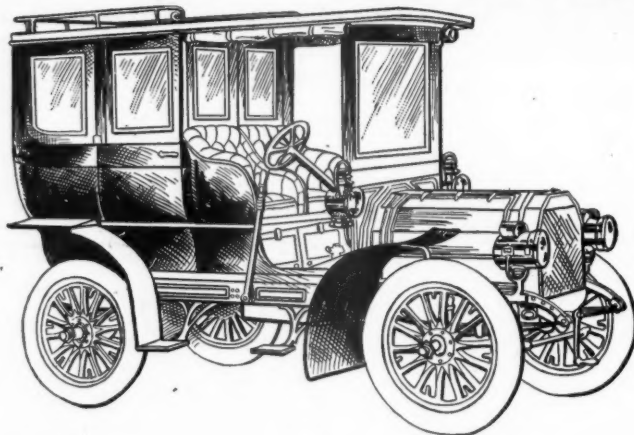
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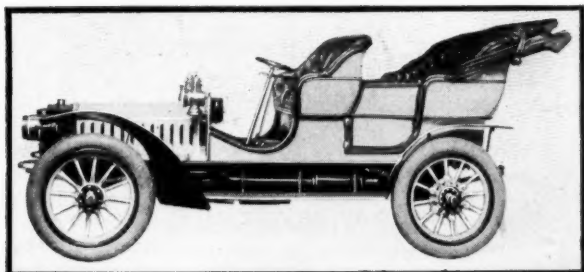
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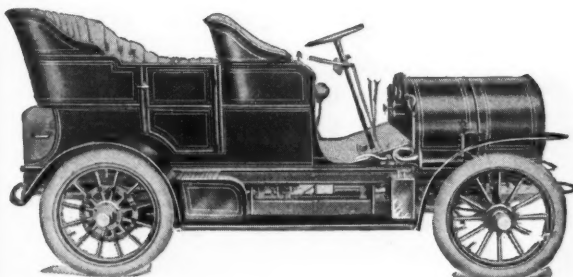
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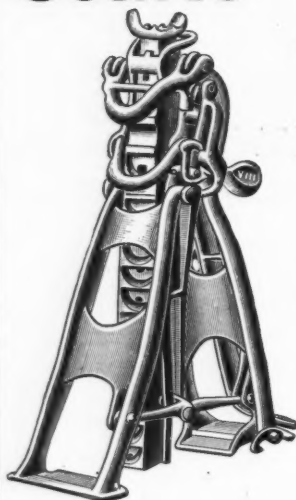
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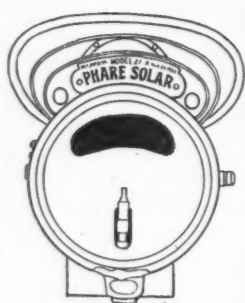
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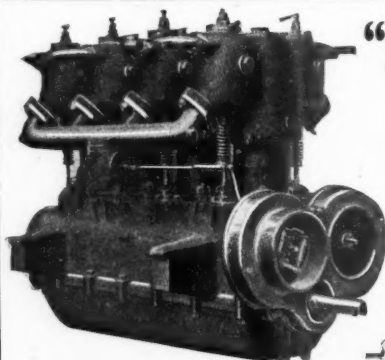
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"Aster" Motors

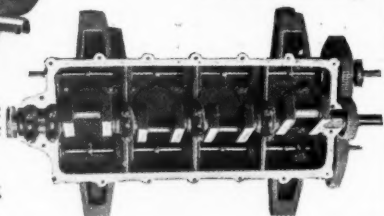
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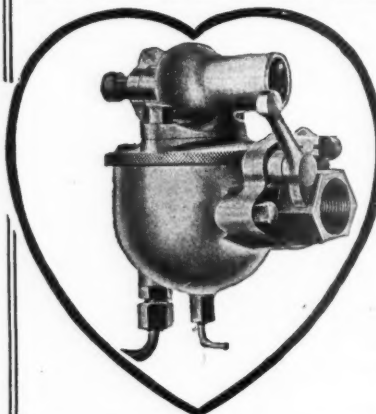
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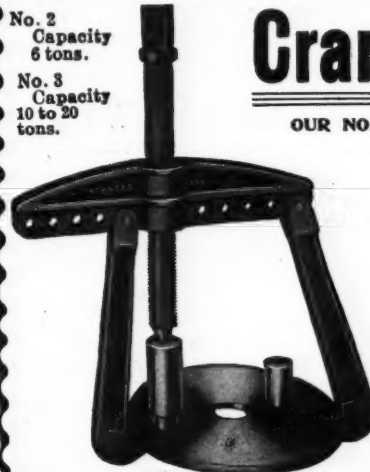
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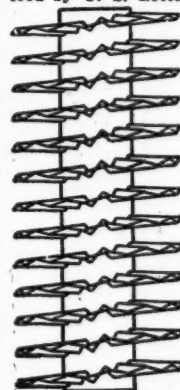
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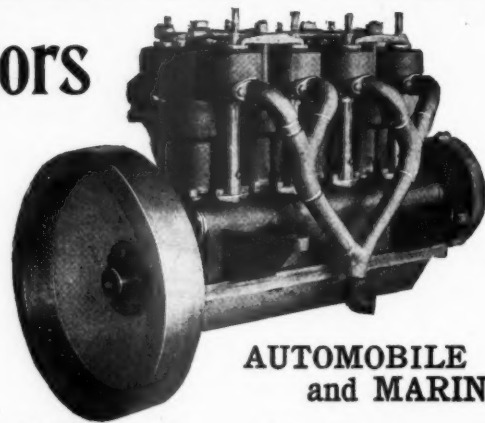
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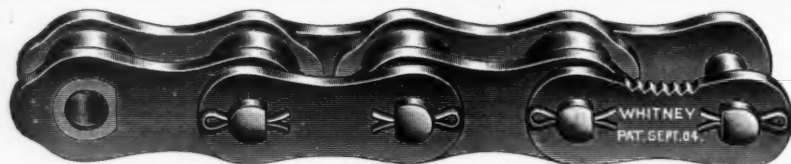
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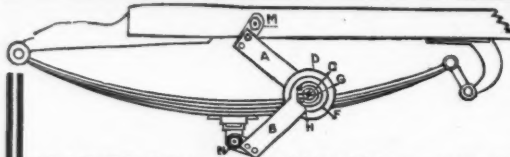


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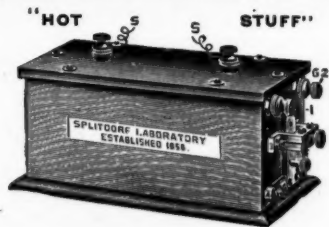


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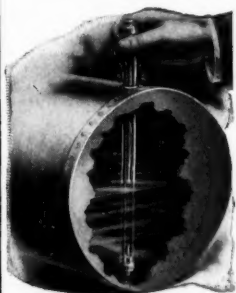


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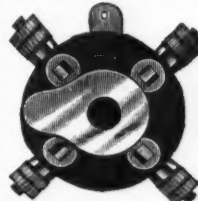
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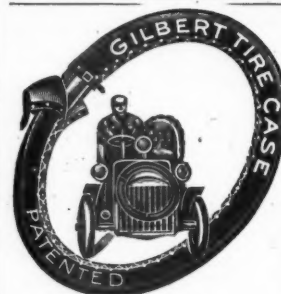


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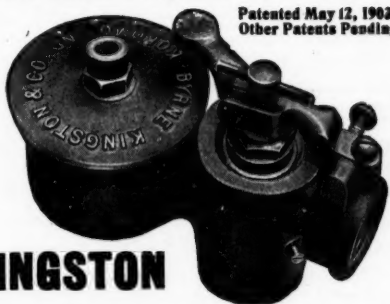
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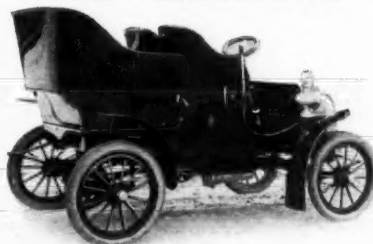
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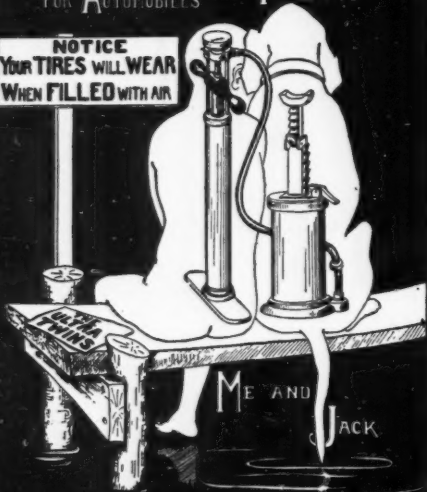
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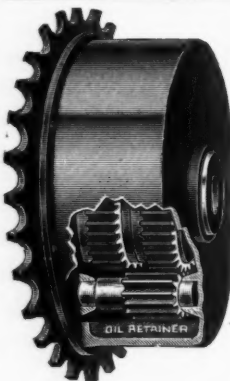
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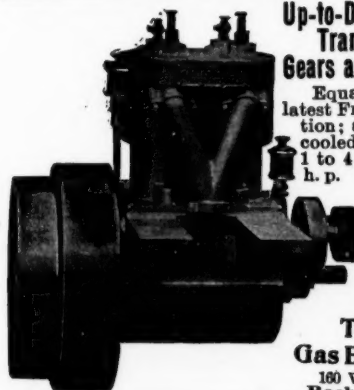
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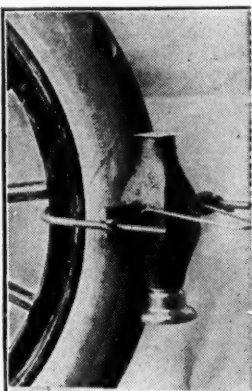
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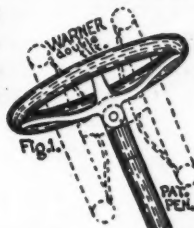
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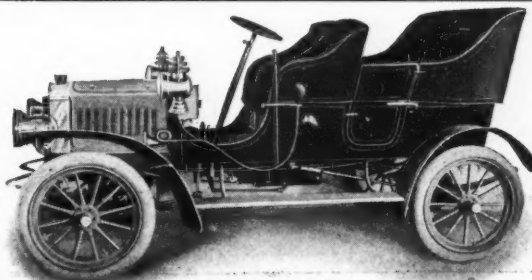
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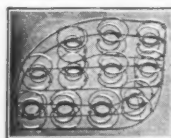
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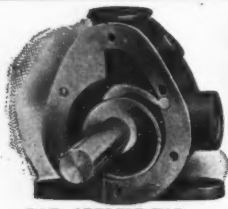
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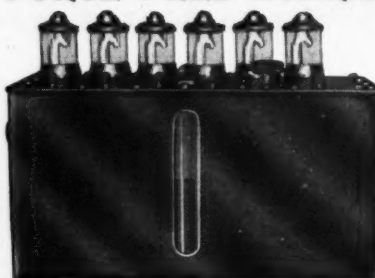
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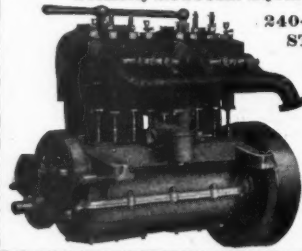
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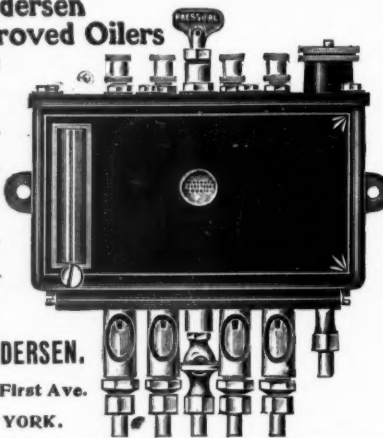
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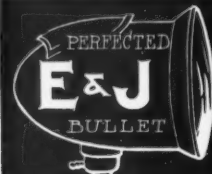


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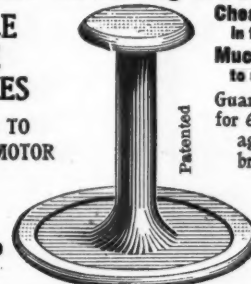
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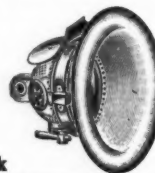
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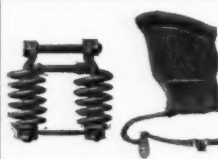
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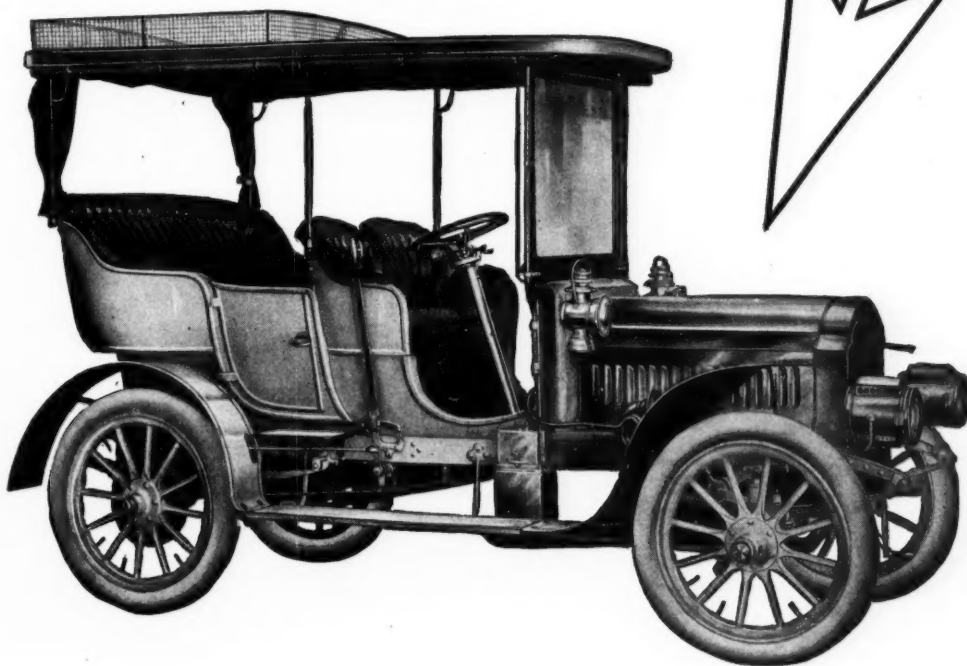
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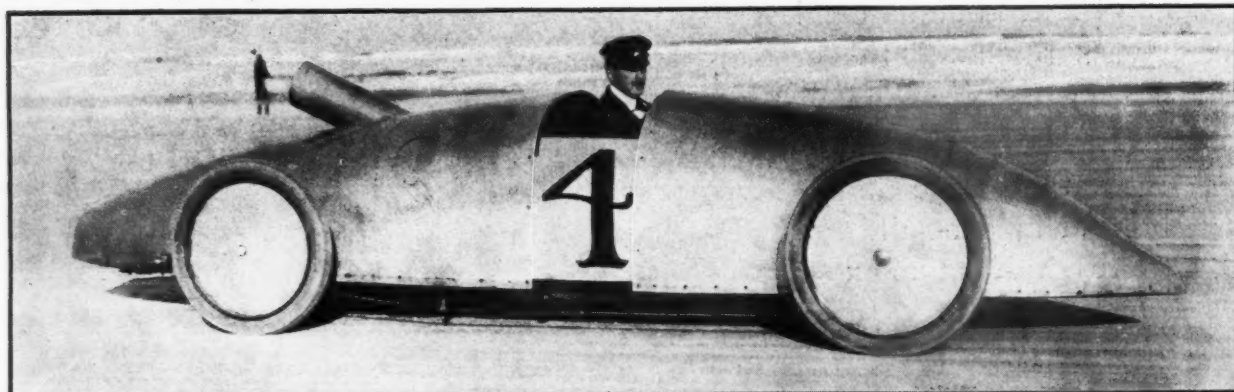


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